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DRAFT

TRAFFIC IMPACT ANALYSIS

for

Ravensdale Park – Phase 2 Sports Fields
Ravensdale, WA

Prepared for:
RAVENSDALE PARK
c/o:
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I. Introduction

The following traffic study was prepared at the request of the Ravensdale Board to assess vehicle access and circulation as well as parking demands for the proposed Phase 2 expansion of the park to include two new artificial turf baseball/soccer fields with lights at the northwest end of the property.

This study summarizes existing traffic and parking conditions, trip generation estimates for existing and proposed use, vehicular trip distribution and assignment, intersection impacts and level of service at the proposed site access, site access design issues including left and/or right turn lane demands, and parking demand.

A. Project Details

The Ravensdale Park is located on the south side of Kent Kangley Road between 268th Ave SE and 272nd Ave SE. The property extends south to Ravensdale Way. A vicinity map is presented in Figure 1.

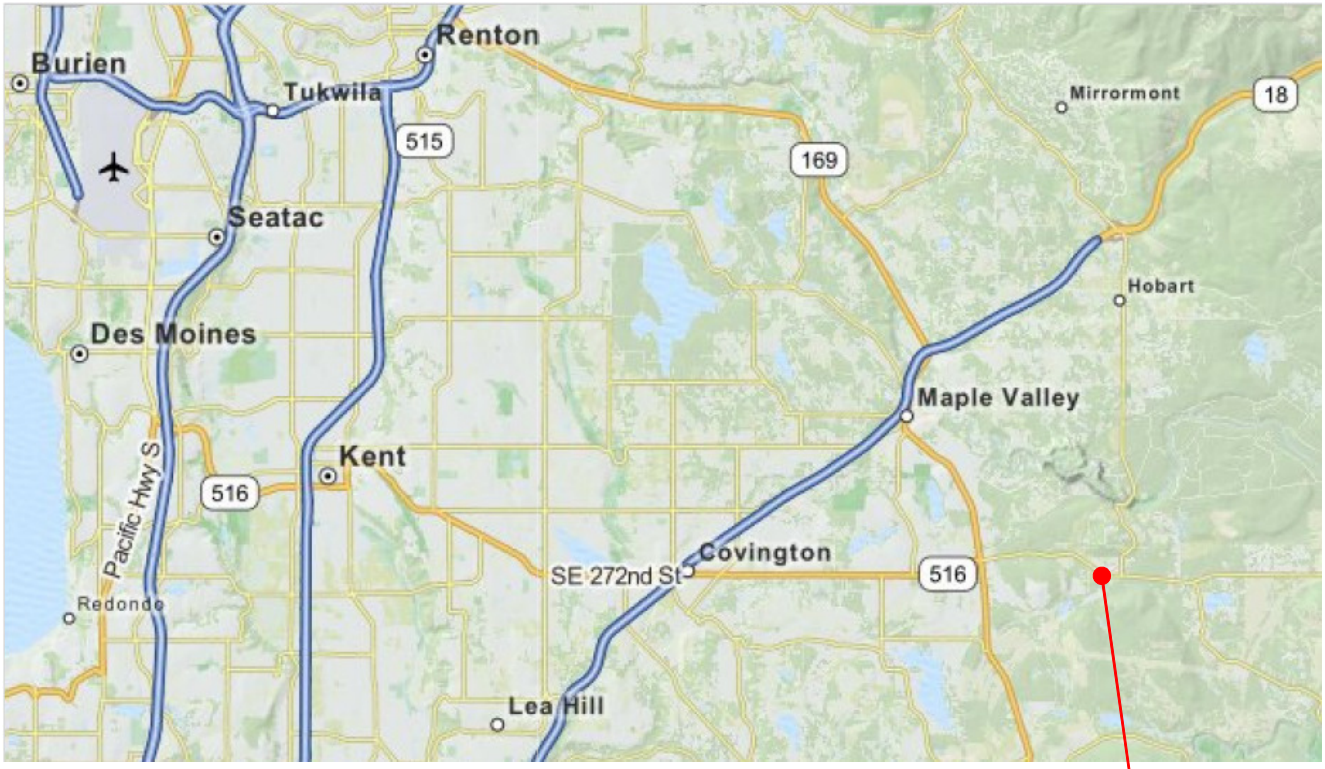
The existing site includes a large grass field that has baseball diamonds at both ends. The fields are generally used for lower age group sports events. During the Fall, the fields are divided into 3 separate soccer fields. At the north end, there is one artificial turf soccer field and partial turf baseball field (infield is artificial turf, outfield is grass). Both of these fields are lit. There are restroom facilities at the north end between the parking lot and the turf fields. At the very south end of the park is the community center building which has some office space but is primarily used for indoor baseball workouts, as well as other exhibition events.

Access to the majority of the parking areas is to/from 272nd Ave SE. This roadway runs through the site and connects between Kent Kangley Road and Ravensdale Way. The roadway is a public roadway in public right-of-way at the north end, however the south portion of the roadway is not, it extends to Ravensdale Way on park property.

The proposed project is entitled Phase 2 of the Ravensdale Park Master Plan. Phase 2 would include two new full regulation baseball/soccer fields, field lighting, restroom and snack bar facilities, a new parking lot between the Phase 1 and 2 fields and a perimeter pedestrian pathway around the fields. The parking lot access is proposed to Kent Kangley Road and would be adjacent to the existing commercial/construction yard driveway on the north side. The driveway address is 27034 for the commercial driveway.

A site plan depicting parking and access is shown in Figure 2.

North



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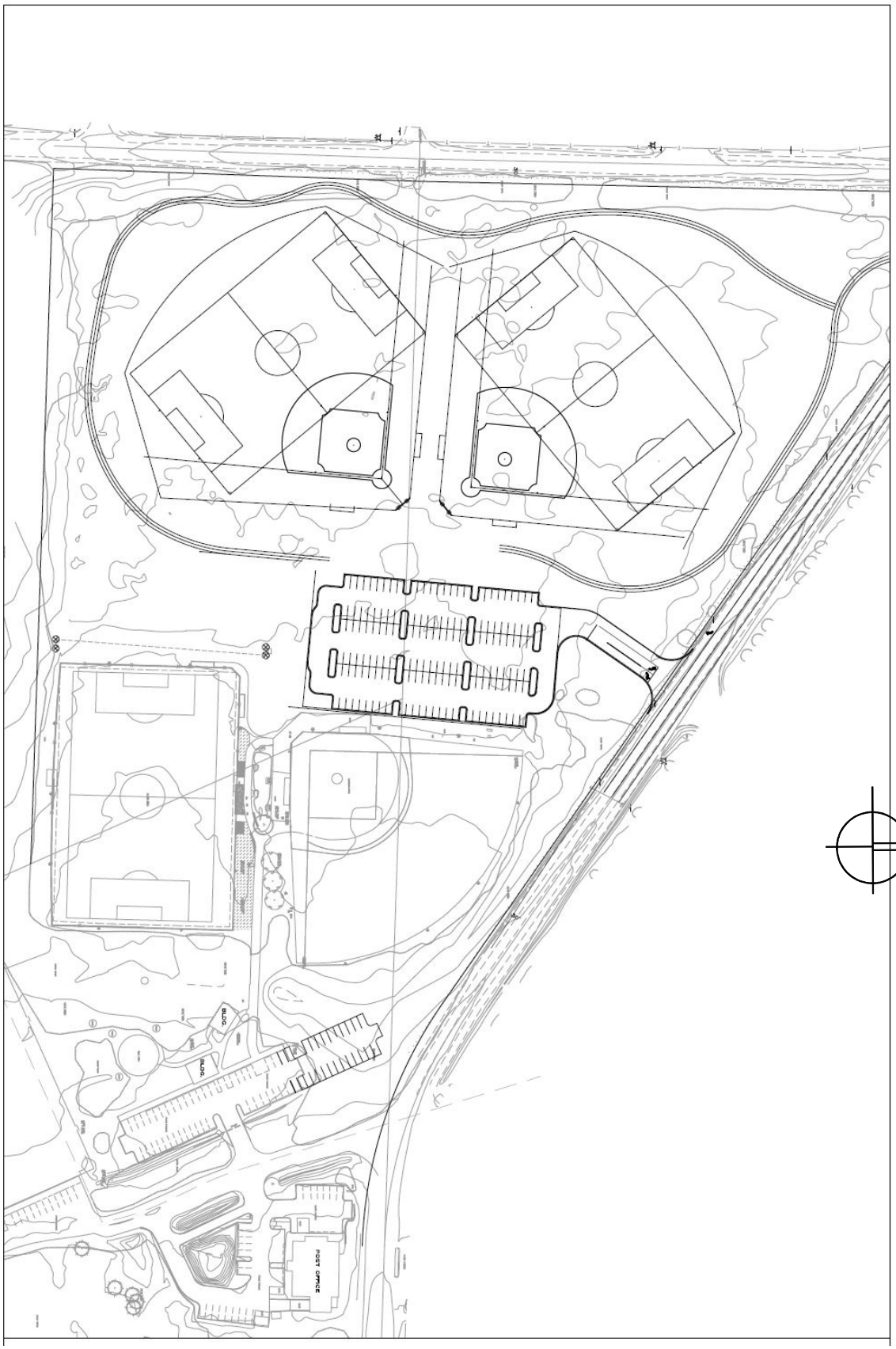
VICINITY MAP

Figure 1

Ravensdale Park
Phase 2



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SITE PLAN

Figure 2

Ravensdale Park
Phase 2

The portion of the site proposed for the new ball fields is currently vacant. The site was cleared internally a few years back. Large fir trees surround the perimeter of the site and these trees will remain.

II. Existing Conditions

The existing conditions section identifies the roadway and intersection channelization/intersection control features, existing traffic volumes, and existing park conditions/operations.

A. Roadway Inventory

The primary arterial road system serving the park is Kent Kangley Rd, SE Ravensdale Way, 276th Ave SE (Landsburg Rd SE). The local streets surrounding the site include 268th Ave SE and 272nd Ave SE. These streets are discussed below.

- Kent Kangley Rd is an east-west minor arterial per King County. In the vicinity of the site, the roadway is approximately 40-feet wide with an 11-foot lane each direction plus 9-foot shoulders on both sides. The posted speed is 45 mph west of 272nd Ave SE and 35 mph between 272nd Ave SE and 276th Ave SE. In this section, the roadway traverses through abutting commercial and residential land uses. The roadway condition is good and the profile is relatively flat.

- Ravensdale Way is in general a north-south 2-lane minor arterial. It runs predominantly east-west in the site vicinity. This roadway provides connection from Kent Kangley Road at the north end to the City of Black Diamond at the south end. The roadway is approximately 30 feet wide with two 11-foot travel lanes (one per direction). There is some residential land uses fronting the north side of the roadway just west of the park, however, the majority of the abutting land is native. The posted speed limit is 35mph.

- 276th Ave SE (Landsburg Rd SE) is a north-south 2-lane minor arterial. This roadway provides connection from Kent Kangley Rd at south end to the City of Issaquah at the north end. The roadway in the site vicinity is 36-feet wide with two 11-foot travel lanes (one each direction). The posted speed limit is 40 mph.

- 268th Ave SE is a rural local access roadway, most likely considered per King County as a Neighborhood Collector. In general, the roadway is 22 feet wide with large gravel shoulders 8- to 10-feet in width. There are no channelization marking on this road. The posted speed limit is 35 mph. This roadway provides connection between Kent Kangley Rd and Ravensdale Way and serves residential neighborhoods. The

vast majority of the residential properties take access to lesser local access streets that connect to 268th Ave SE.

- 272nd Ave SE is a private local access street. It provides connection between Kent Kangley Rd and Ravensdale Way and serves the Ravensdale Park and the US Post Office. The roadway is approximately 28 feet wide at the north end with gravel shoulders but narrows back to 24 feet wide for the majority of the roadway. However, there are no channelization markings and the south half has abutting perpendicular paved parking so the roadway is not well defined. The north end of the roadway is shared by the Park and the Post Office, the south half of the roadway is all on Park property. Thus, as noted above, this roadway is a private street, nevertheless, there is some vehicular traffic that uses this roadway presumed as a short-cut connection between the two arterial roadways. Traffic counts conducted by WPA indicate some heavy vehicle traffic during the weekday PM peak period but no trucks during the Saturday mid-day counts. The predominant vehicular use of this road is shared by the Park and the Post Office. All the sports field uses of the Park take access to/from 272nd Ave SE from adjacent/abutting parking areas.

B. Intersection Inventory

In addition to the roadways, brief discussions of each of the analysis intersections are noted below:

Kent Kangley Rd/272nd Ave SE: This is a 3-leg minor street stop sign controlled intersection with a fourth leg driveway. This intersection is configured as follows:

- The northbound and southbound approaches are stopped. The southbound approach is a shared commercial/residential access driveway for the abutting properties. According to King County records, there is no right-of-way for this north leg. The same can be said for the south leg; however, the south leg currently functions more like a public street.
- Minimal channelization exists for the side street approaches, and there are no pedestrian crosswalks, (which is not uncommon).
- 1 lane each direction all approaches. However, even though there is no definitive channelization markings the north and south approaches are wide enough to accommodate both left and right turn movements.

Kent Kangley Rd/276th Ave SE: This is a 4-leg minor street stop sign controlled intersection. This intersection is configured as follows:

- 1 lane each direction all approaches.
- The northbound and southbound approaches are stopped.
- Channelization exists for the side street approaches, and there is a pedestrian crosswalk on the west leg.

Kent Kangley Rd/268th Ave SE: This is a 4-leg minor street stop sign controlled intersection. This intersection is configured as follows:

- 1 lane each direction all approaches.
- The northbound and southbound approaches are stopped.
- Minimal channelization exists for the side street approaches, and there are no pedestrian crosswalks.
- The intersection is slightly skewed due to the fact Kent Kangley Road runs from the NW to the SE through this intersection.

Ravensdale Way/272nd Ave SE: This is a 3-leg minor street stop sign controlled intersection. This intersection is configured as follows:

- 1 lane each direction all approaches.
- The southbound approach is stopped.
- No definitive channelization exists for the side street approach, and there are no pedestrian crosswalks.

Kent Kangley Rd/27034 Commercial Driveway: This is technically a driveway approach to Kent Kangley Rd. The driveway approach is of course required to stop. The driveway flare is wide enough to accommodate left and right turn movements as well as turn paths for large vehicles.

C. Existing Traffic Volumes

Daily Counts

The average weekday daily traffic count on Kent Kangley Road west of 276th Ave SE was noted to be 4,800 vpd in 2011. The daily count in 2007 was 5,600 vpd, and daily volumes noted for year in between depict a decline in traffic.

As part of this study, 24-hour counts were conducted in July 2012 on Kent Kangley Rd west of 272nd Ave SE that included two weekdays Thursday 7/12/12, and Friday 7/13/12, as well as Saturday 7/14/12. The average weekday daily volume was observed to be 6,080 vpd, with Thursday at 6,544 and Friday at 5,612 vpd. The Saturday daily volume was found to be 5,523 vpd. It should be noted that by way of comparison with the KC count at 276th Ave SE, it is expected that the volume on Kent Kangley Road will be higher west of 272nd Ave SE than west of 276th Ave SE.

A depiction of the daily volume eastbound on Kent Kangley Rd west of 272nd Ave SE is shown in Figure 3. As can be seen here the weekday volume tends to peak around 4pm to 5pm time frame. The peak volume is approximately 300 vph. On Saturday, the volume peaks closer in the mid-day around 2pm. The volume is approximately 225 vph.

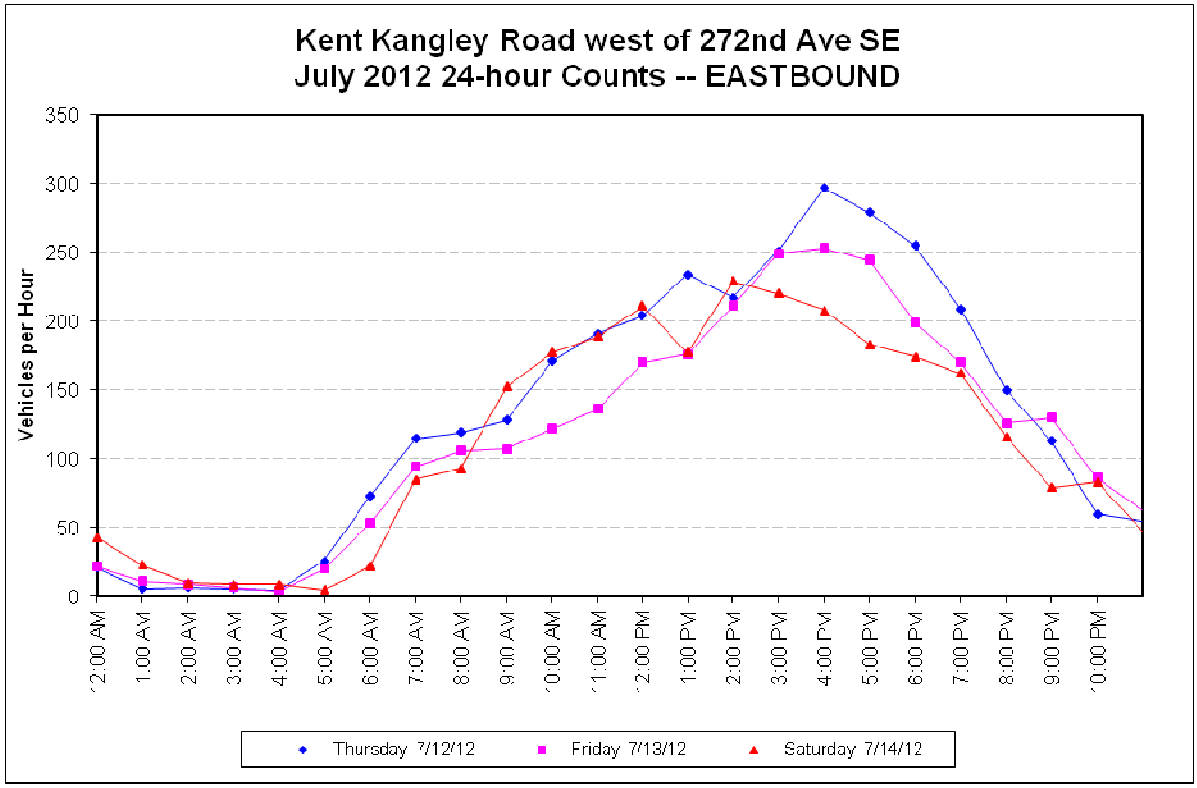


Figure 3

A depiction of the daily volume westbound on Kent Kangley Rd west of 272nd Ave SE is shown in Figure 4. As shown here, interestingly, the westbound volume is relatively constant between 11am and 6pm, with an approximate volume of 225 vph. On Saturday the volume peak in the morning at 10am at 250 vph, however for the remainder of the day the hourly volume is under 200 vph.

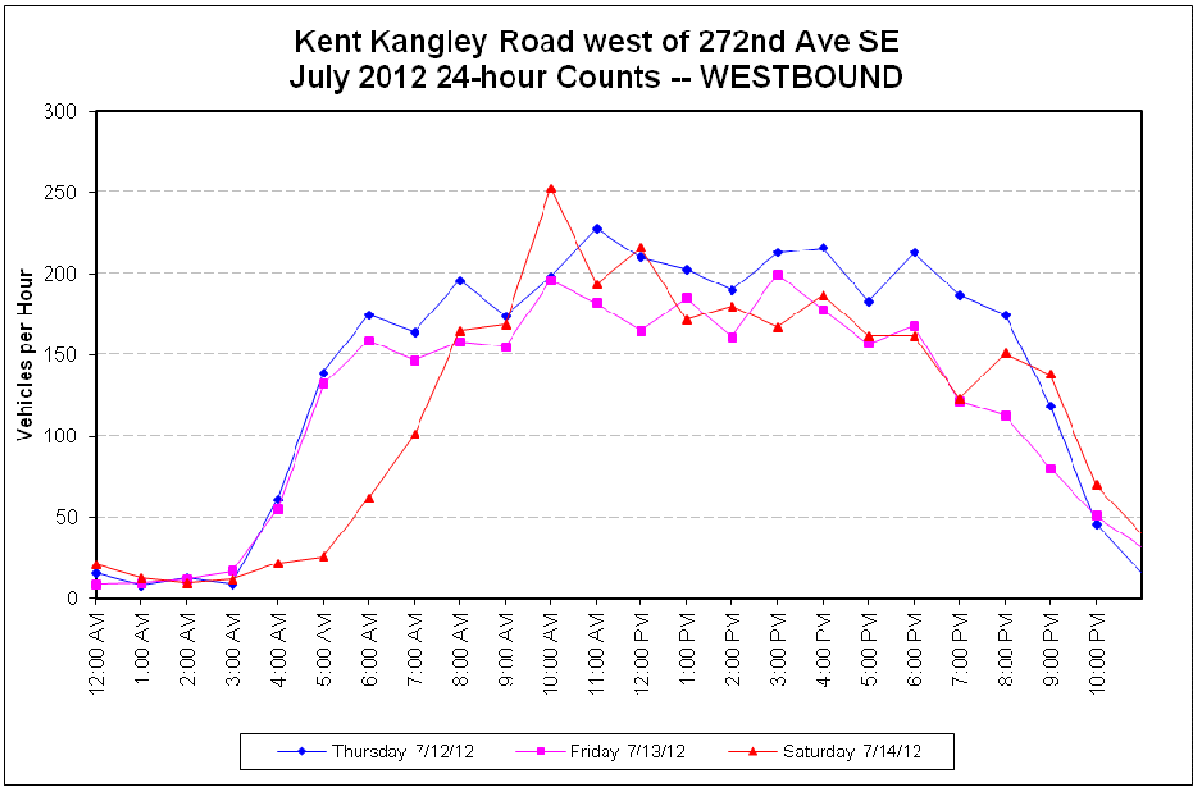


Figure 4

The daily volume bothways on Kent Kangley Rd west of 272nd Ave SE is shown in Figure 5. Depicted here is the accumulation of eastbound and westbound traffic. The total two-way volume for the weekday condition peaks around 4pm to 5pm at just over 500 vph. The Saturday two-way volume peaks in the late morning between 10am and noon. The volume is just over 400 vph.

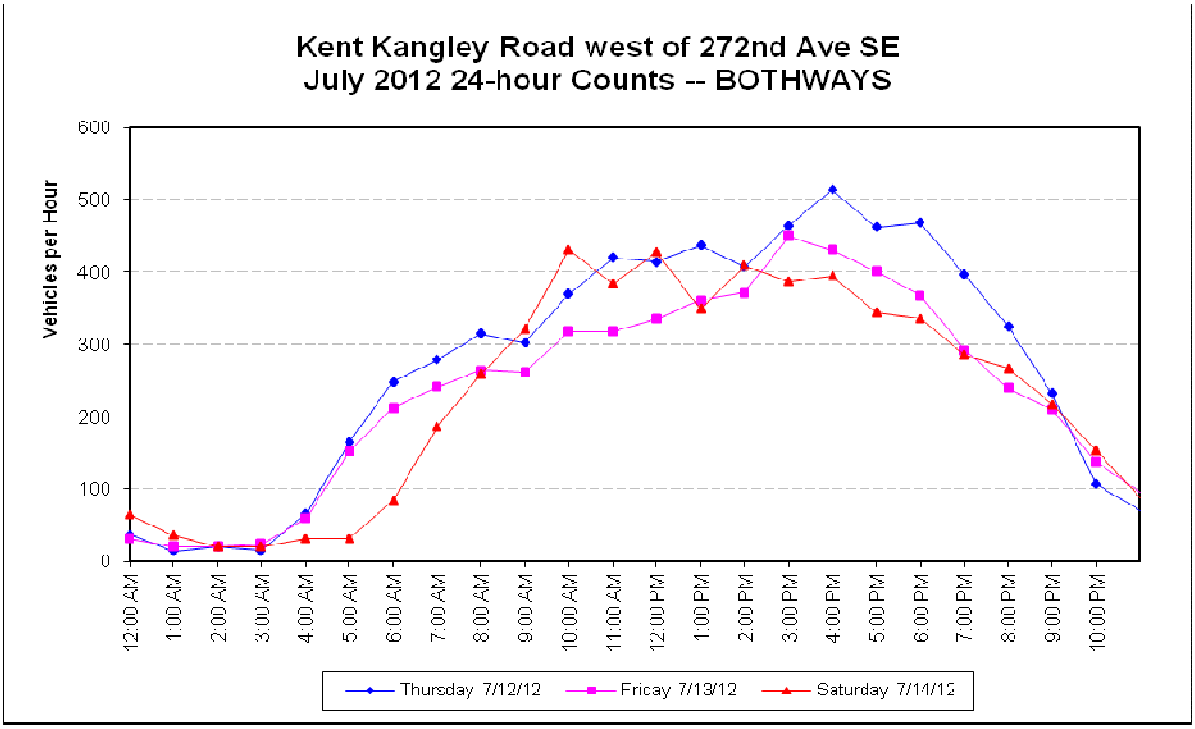


Figure 5

Peak Hour Counts

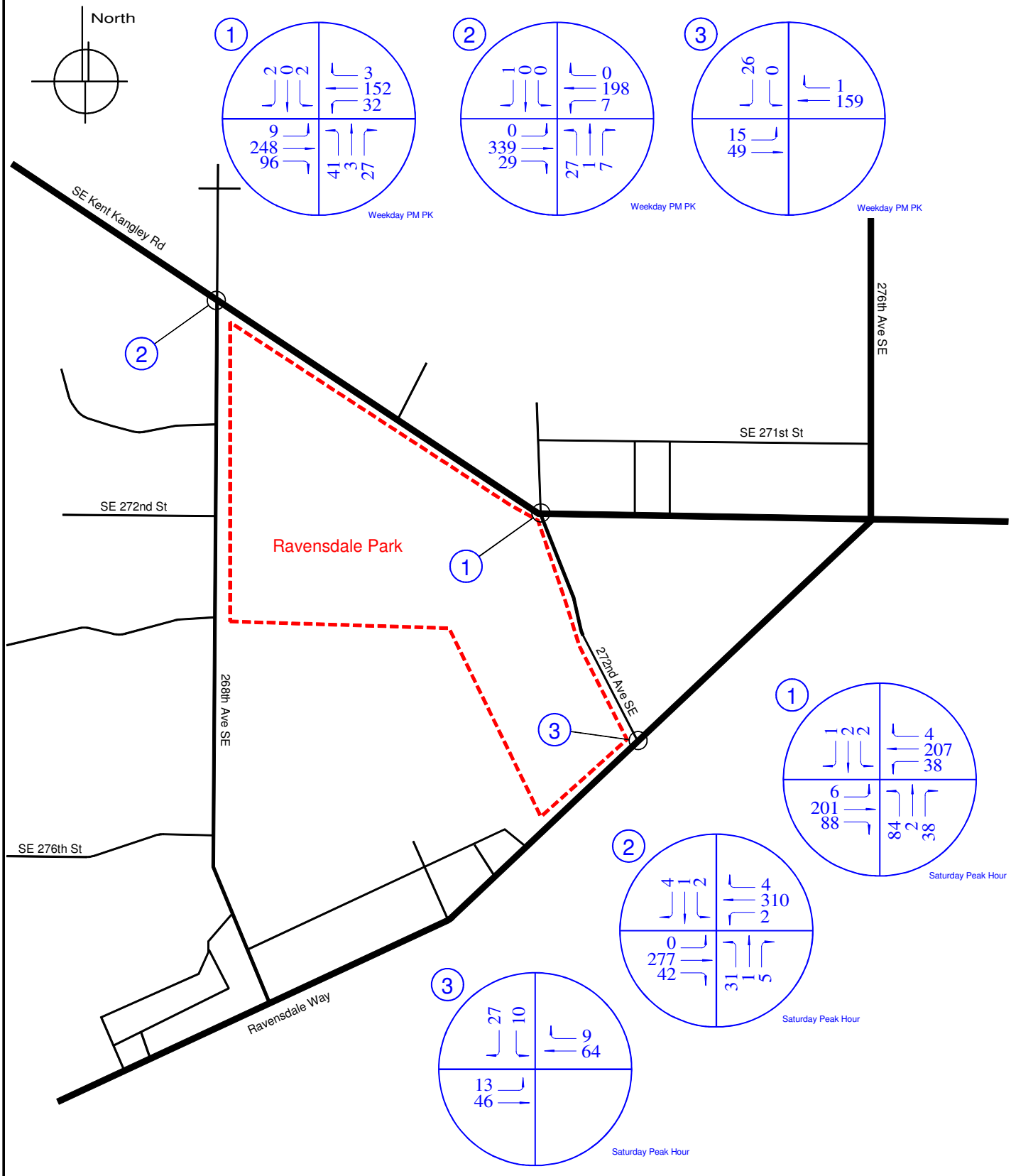
Existing PM peak hour turning movement counts were conducted in the Fall when sports activity was occurring at the park, presumed to be during peak times. Saturday counts were conducted at Kent Kangley Rd/272nd Ave SE, Kent Kangley Rd/268th Ave SE, and at Ravensdale Way/272nd Ave SE. These counts were conducted September 29, 2012 between 10:30am and 1:30pm.

A weekday count was also conducted at each of these three intersections Wednesday October 3, 2012. These counts were conducted between 4:30pm and 6:30pm.

The volumes are shown in Figure 6. The turn movements are also attached in the technical appendix.

D. Speed Study

As part of the daily counts conducted in July 2012, a speed study was also conducted on Kent Kangley Road west of 272nd Ave SE. The following is a summary of the speed study results:



xx - 2012 PK HOUR

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EXISTING TRAFFIC VOLUMES

Figure 6

Ravensdale Park
Phase 2

Eastbound

- Thursday: The average speed was 40.8 mph, the 85th percentile speed was 45.5 mph, and the maximum speed recorded was 69.7 mph.
- Friday: The average speed was 41.1 mph, the 85th percentile speed was 46.0 mph and the maximum speed recorded was 81.2 mph.
- Saturday: The average speed was 41.1 mph, the 85th percentile speed was 45.9 mph, and the maximum speed recorded was 88.7 mph.

Westbound

- Thursday: The average speed was 44.5 mph, the 85th percentile speed was 49.3 mph, and the maximum speed recorded was 92.8 mph.
- Friday: The average speed was 44.4 mph, the 85th percentile speed was 49.2 mph and the maximum speed recorded was 75.7 mph.
- Saturday: The average speed was 44.1 mph, the 85th percentile speed was 48.8 mph, and the maximum speed recorded was 76.9 mph.

The average 85th percentile speed eastbound is 45.8 mph. The average 85th percentile speed westbound is 49.1 mph. The 85th percentile speed does not appear to significantly fluctuate between days. It is important to note the posted speed limit just west of the 272nd Ave SE intersection is 35 mph eastbound and 45 mph westbound. Traffic is generally slowing down eastbound approaching 272nd Ave SE and is beginning to speed up heading westbound from 272nd Ave SE.

E. Parking

The existing park layout provides for designated and non-designated parking in various areas.

The parking lot at the north end that serves the two turf fields and likely some of the grass fields has a parking supply of 44 striped stalls, plus 2 HC stalls. During peak times, some of the vehicles will park along the 272nd Ave SE frontage.

Towards the south area of the existing park, there is perpendicular paved parking along the eastside of the grass fields fronting the chain link fence, and a gravel area at the south end of the fields. The parking supply along the eastside of the grass fields is approximately 38 stalls plus 2 HC stalls. At the south end of the grass fields there is a large gravel parking lot (no striping of course). It is estimated this lot could accommodate approximately 60 stalls. Finally, the community center hall has a paved parking area that can accommodate 24 stalls plus 2 HC stalls.

All-in-all, there is approximately 166 stalls plus 6 HC stalls.

F. Current Park / Sports Field Schedules

As noted earlier, there are three sports field areas that generate use for practices and games. For this analysis, the focus is on the Fall events as it is presumed the aggressive soccer program all ages both genders as well as some Fall baseball will occur. In general, soccer, baseball, and even lacrosse are similar in team size thus expected to generate similar traffic. No official team football is practiced or played on these fields.

Weekday Practice

The Fall soccer schedule would include single practices on the grass fields, Ravensdale 1, 2, and 3 during daylight periods. For the younger age groups, practices are expected to run approximately 1 hour in duration. For this study, it was assumed three teams practicing on these fields daily between 5pm and 6pm. The time of course would adjust as darkness arrives earlier throughout the season.

For the existing Ravensdale Turf soccer field, the following schedule was in effect for the Fall 2012 season. This is shown in Table 1.

Table 1
Fall 2012 Practice Schedule – Ravensdale Turf Field 1

Time of Day	Monday	Tuesday	Wednesday	Thursday
5:00-6:30 pm	GU12 [a]	BU12	GU12	BU12
5:00-6:30 pm	BU10 [a]	GU13	BU13	GU14
5:00-6:30 pm	BU11	GU10	BU10	BU15
6:30-8:00 pm	GU16	GU14	BU15	BU16
6:30-8:00 pm	GU16	BU13	BU15	none
6:30-8:00 pm	GU13	BU13	GU15	BU14
8:00-9:30 pm	BU16	BU16	GU16	none
8:00-9:30 pm	BU17	BU17	BU17	BU17
8:00-9:30 pm	none	none	none	none

a GU12 is a girls soccer team age group under 12. BU10 is a boys team age group under 10.

As shown here, typically Monday, Tuesday, and Wednesday are the busiest days. The field is not available for Friday use. There are three back-to-back 1.5 hour practice sessions, with 3 teams on the field beginning at 5pm and ending at 9:30pm. The late session typically is reserved for the older groups and the field is used by only 2 teams.

It was observed that the Rock Creek Baseball program holds practice on the Turf baseball field (Ravensdale Turf Field 2). Practice is assumed to start at 5:30 and end at 7:00pm.

Weekend Games

Weekend games are expected to be the busiest during Saturdays for soccer games. Baseball games during the Fall are anticipated to occur on Sundays. In general, the games run between September and mid November.

Ravensdale 1 and 2 grass typically have 5 to 6 games on those two fields. Game start times usually run between 9:30am and 2:00pm. The boys and girls U9 divisions play on these fields.

Ravensdale 3 grass typically have 4 games played on this field. The game start times run between 10:30am and 3:00pm. The boys and girls U10 divisions play on these fields.

Ravensdale Turf Field 1 typically operate 4 to 5 games per Saturday, with game start times beginning around 9am and final game starting around 4pm. These teams range from U11 to U18. The season use runs between early September and end of October per the current league schedule.

Table 2 below depicts a typical soccer schedule at all the existing Ravensdale fields for Saturday September 29, 2012.

Table 2
Fall 2012 Game Schedule – Ravensdale Grass 1, 2, 3, and Turf Field 1

2012 Maple Valley Soccer Association U11-U18

Authority	Division	Date	Gender	Age	Field	Time
Premiere	PSPL	9/29/2012	G	12	Ravensdale Turf	10:00 AM
Premiere	PSPL	9/29/2012	G	14	Ravensdale Turf	11:30 AM
Premiere	PSPL	9/29/2012	B	14	Ravensdale Turf	1:30 PM
Dist 3	Rec	9/29/2012	B	16	Ravensdale Turf	3:30 PM

2012 Maple Valley U10 Inter-District League Schedules

Authority	Division	Date	Gender	Age	Field	Time
-	-	9/29/2012	B	9	Ravensdale 3	9:00 AM
-	-	9/29/2012	G	9	Ravensdale 3	10:30 AM
-	-	9/29/2012	G	9	Ravensdale 3	12:00 PM
-	-	9/29/2012	B	9	Ravensdale 3	1:30 PM

2012 Federal Way U9 Inter-District League Schedules

Authority	Division	Date	Gender	Age	Field	Time
-	-	9/29/2012	G	8	Ravensdale 1	9:30 AM
-	-	9/29/2012	G	8	Ravensdale 2	10:00 AM
-	-	9/29/2012	G	8	Ravensdale 1	11:00 AM
-	-	9/29/2012	B	8	Ravensdale 2	11:30 AM
-	-	9/29/2012	G	8	Ravensdale 1	12:30 PM
-	-	9/29/2012	B	8	Ravensdale 2	1:00 PM

III. Future Conditions

This section includes discussion and analysis of project trip generation, project trip distribution and assignment, future traffic volumes estimates for PM peak hour conditions, and intersection level of service analysis including site access driveways.

A. Trip Generation

Trip generation is typically estimated for common land uses based on information from the current edition of the ITE *Trip Generation Report*. However, for this development, a more refined and specialized approach was developed to estimate field use trips for the weekday PM period and the Saturday period. Estimates for each field were developed based on professional engineering judgment as well as common knowledge of sports activities including players, parents, coaches, game day referees, and fans.

Weekday PM Estimates

Trip generation estimates were made for the existing and proposed fields on a 10-minute interval period between 3pm and 10pm. Based on the known schedules for existing events and estimates for the two new fields, the following assumptions were made for each field:

- Ravensdale Grass 1, 2 and 3: These fields would be used by Boys and Girls U9 and U10. These fields are not lit. It is assumed each field would have one practice per day between 5pm and 6pm and likely earlier as daylight gets shorter. It is assumed that there are 10 players per team plus a parent coach. 10% of the player's likely carpool, and it was assumed that 40% of the parents would drop off and return to pickup. The remainder would stay at the fields.

- Ravensdale Turf 1 (Existing Soccer Field): This field would be used by Boys & Girls U11 - U18 with Monday, Tuesday and Wednesday being the busiest days. There would be three practice time slots, each 1.5 hour duration beginning at 5pm and last one ending at 9:30pm. For the first two sessions, there would be 3 teams per field. It is assumed each team would be 15 players plus coaches. It is assumed that 50% carpool, which would equate to 23 vehicle arrival and 23 departure. It is assumed that 40% of the parents would drop off and return, which would equate to 9 trips. The remainder of course would stay.

  For the 3rd session beginning at 8pm for the older kids, there would be 2 teams per field. It was assumed 50% of players drive, and 25% carpool. That would equate to: (2*15)*50%=15; 15*(1-25%)=11. Thus, 11 trips arriving are by player or player carpool. The remainder would be parents driving players, which is 50%.

It is assumed 25% carpool. That would equate to similar results: (2*15)*50%; 15*(1-25%)=11. Thus, there would be 11 trips via parent. Total trips would equate to 22 trips arriving and departing; 11 from players and 11 from parents. In addition, it was assumed that 40% of the parents driving would drop off and return, thus 11*40%=4 trips exiting after drop off and 4 trips arriving to pickup. This would be in addition to the 22 trips arriving before practice and 22 trips leaving after practice.

- The Rock Creek Fall baseball program trip estimate was based on a local observation of activity on the baseball turf field. Baseball practice began at 5:30 and presumed to end at 7pm. It was assumed that there would be 10 trips arriving before practice, and thus 10 exiting after practice. It was assumed that 5 trips would be drop off and pickup.

The results of the trip generation analysis for the weekday PM period are presented in Table 3. A detailed summary of all fields is included in the appendix.

Table 3
Weekday Practice Trip Generation Estimates [a]

Hour Begin	EXISTING [b] Ravensdale Grass 1,2,3, and Existing Turf Field 1 (baseball field use on Field 2)			PHASE 2 [c] Ravensdale Existing Turf Field 1 and New Turf Fields 3 and 4 (baseball field use on Field2)		
	In	Out	Total	In	Out	Total
3:00 PM	0	0	0	0	0	0
3:10 PM	0	0	0	0	0	0
3:20 PM	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0
3:40 PM	0	0	0	0	0	0
3:50 PM	14	0	14	15	0	15
4:00 PM	50	0	50	69	0	69
4:10 PM	50	15	65	69	18	87
4:20 PM	53	21	74	72	27	99
4:30 PM	60	21	81	79	27	106
4:40 PM	60	24	84	79	30	109
4:50 PM	55	26	81	64	32	96
5:00 PM	22	26	48	10	32	42
5:10 PM	22	32	54	10	14	24
5:20 PM	30	32	62	40	5	45
5:30 PM	44	32	76	96	5	101
5:40 PM	**44**	**55**	**99**	96	80	176
5:50 PM	37	59	96	98	96	194
6:00 PM	37	59	96	101	96	197
6:10 PM	37	45	82	**101**	**103**	**204**
6:20 PM	26	42	68	68	106	174
6:30 PM	5	42	47	5	106	111
6:40 PM	5	16	21	5	28	33
6:50 PM	13	10	23	33	10	43
7:00 PM	31	10	41	93	10	103
7:10 PM	31	25	56	93	69	162
7:20 PM	31	27	58	93	81	174
7:30 PM	31	27	58	93	81	174
7:40 PM	31	27	58	93	81	174
7:50 PM	21	27	48	63	81	144
8:00 PM	0	27	27	0	81	81
8:10 PM	0	5	5	0	15	15
8:20 PM	2	0	2	6	0	6
8:30 PM	4	0	4	12	0	12
8:40 PM	4	18	22	12	54	66
8:50 PM	4	22	26	12	66	78
9:00 PM	4	22	26	12	66	78
9:10 PM	4	22	26	12	66	78
9:20 PM	2	22	24	6	66	72
9:30 PM	0	22	22	0	66	66
9:40 PM	0	4	4	0	12	12
9:50 PM	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0

a Estimate for Fall soccer and baseball All volumes represent hourly conditions in 10-minute intervals. Time shown at left reflects the begin time of the hour noted.

b Volume estimates include all existing field uses. One baseball practice assumed. These volumes would use 272nd Ave SE from the existing parking areas provided.

c Phase 2 includes two new turf fields. The volumes shown include all four of the turf fields; the two existing and the two new. The grass fields noted as Ravensdale 1, 2 and 3 are not included in these totals. All of these volumes are estimated to use the new parking area. These volumes thus reflect a conservative approach as some vehicles will likely use the existing parking area to the east.

As shown in Table 3, the estimated peak vehicle activity for the existing field uses is 99 trips (44 in and 55 out) which would occur between 5:40 and 6:40 pm. The time of course may fluctuate.

With the completion of Phase 2 of the Park, it was estimated that the trips on the existing two turf fields would use the new parking area. This is a conservative estimate as some of this traffic will of course still use the existing parking area to the east of the existing fields. The grass field trip generation is not included in the new parking area for Phase 2. It is estimated that the peak vehicle activity for the Phase 2 use including all four turf fields would be 204 trips (191 in and 103 out). The peak hour is estimated to be 6:10 to 7:10pm.

Saturday Estimates

Trip generation estimates were made for the existing and proposed fields on a 10-minute interval period between 8am and 5:30pm, however, Table 4 below only includes information up through 4:20pm. Based on the known schedules for existing events and estimates for the two new fields, the following assumptions were made for each field:

- Ravensdale Grass 1, 2 and 3: These fields would be used by Boys and Girls U9 and U10. Each team would field 10 players, thus a potential for 20 vehicles arriving assuming parent coach. Assuming 10% carpool, that would equate to 18 vehicle arrival, and departure. Assume 1 outside referee for each game, and 3 vehicles for other spectators. Three 1-hour games with 30min spacing on Ravensdale 1 and 2, and four games on Ravensdale 3.

- Ravensdale Turf 1 (Existing Soccer Field): This field would be used by Boys & Girls U11 - U18. For game day, the analysis assumes 15 players per team, and 15% carpool. Assume two coaches per team, one being a parent. Thus total vehicle arrival would be 28 trips; 30*(1-0.15) +2 = 28.

  Each game would include 3 referees and possibly up to 3 vehicles for other spectators (1 to 4 per car). Some games per the existing schedule are spaced relatively close back-to-back thus it is assumed the referees would do both games. It is assumed there would be up to 4 games played between 10am and 5pm.

- Ravensdale Turf 3 and 4 (proposed new fields): The same assumptions were made for these two fields as was made for Ravensdale Turf 1 above, hence 28 trip arrival for players/parents/coaches, 3 trip arrival for referees, and 3 trip arrival for other spectators.

The results of the trip generation analysis for the Saturday period are presented in Table 4. A detailed summary of all fields is included in the appendix.

Table 4
Saturday Games -- Trip Generation Estimates [a]

Hour Begin	EXISTING [b] Ravensdale Grass 1,2,3, and Existing Turf Field 1 (baseball field use on Field 2) In	Out	Total	PHASE 2 [c] Ravensdale Existing Turf Field 1 and New Turf Fields 3 and 4 (baseball field use on Field2) In	Out	Total
8:00 AM	20	0	20	49	0	49
8:10 AM	26	0	26	60	0	60
8:20 AM	38	0	38	65	0	65
8:30 AM	60	0	60	83	0	83
8:40 AM	71	0	71	75	0	75
8:50 AM	73	0	73	68	0	68
9:00 AM	77	0	77	52	0	52
9:10 AM	78	13	91	42	0	42
9:20 AM	76	20	96	37	0	37
9:30 AM	60	22	82	33	0	33
9:40 AM	51	35	86	34	16	50
9:50 AM	49	42	91	33	34	67
10:00 AM	61	44	105	63	34	97
10:10 AM	70	44	114	83	50	133
10:20 AM	72	44	116	88	68	156
10:30 AM	74	58	132	78	82	160
10:40 AM	75	75	150	69	83	152
10:50 AM	75	75	150	68	65	133
11:00 AM	59	75	134	34	65	99
11:10 AM	49	75	124	13	49	62
11:20 AM	47	75	122	8	31	39
11:30 AM	45	61	106	18	17	35
11:40 AM	44	44	88	27	16	43
11:50 AM	46	44	90	31	34	65
12:00 PM	62	60	122	67	50	117
12:10 PM	71	78	149	87	84	171
12:20 PM	73	78	151	92	102	194
12:30 PM	**77**	**78**	**155**	84	102	186
12:40 PM	74	78	152	75	86	161
12:50 PM	62	78	140	71	68	139
1:00 PM	40	62	102	35	52	87
1:10 PM	25	44	69	15	18	33
1:20 PM	13	44	57	10	0	10
1:30 PM	3	44	47	18	0	18
1:40 PM	0	44	44	27	16	43
1:50 PM	2	44	46	31	34	65
2:00 PM	18	60	78	69	50	119
2:10 PM	27	65	92	90	84	174
2:20 PM	29	58	87	**94**	**102**	**196**
2:30 PM	33	56	89	86	102	188
2:40 PM	34	43	77	77	86	163
2:50 PM	32	36	68	73	68	141
3:00 PM	16	18	34	35	52	87
3:10 PM	7	0	7	14	18	32
3:20 PM	5	0	5	10	0	10
3:30 PM	1	0	1	2	0	2
3:40 PM	0	0	0	0	16	16
3:50 PM	0	0	0	0	34	34
4:00 PM	0	16	16	0	50	50
4:10 PM	0	34	34	0	84	84
4:20 PM	0	34	34	0	102	102

a Estimate for Fall soccer only. Baseball assumed on Sunday. All volumes represent hourly conditions in 10-minute intervals. Time shown at left reflects the begin time of the hour noted.

b Volume estimates include all existing field uses. These volumes would use 272nd Ave SE from the existing parking areas provided.

c Phase 2 includes two new turf fields. The volumes shown also include Turf Field 1 but not the Baseball Field. The grass fields noted as Ravensdale 1, 2 and 3 are not included in these totals. All of these volumes are estimated to use the new parking area. These volumes thus reflect a conservative approach as some vehicles will likely use the existing parking area to the east.

As shown in Table 4, the estimated peak vehicle activity for the existing field uses is 155 trips (77 in and 78 out) which would occur between 12:30 and 1:30 pm. The actual peak time of course may fluctuate.

With the completion of Phase 2 of the Park, it was estimated that the trips on the existing soccer turf field would use the new parking area as part of Phase 2. This is a conservative estimate as some of this traffic will more than likely continue to the existing parking area to the east of the existing fields. The grass field trip generation is not included in the new parking area for Phase 2. It is estimated that the peak vehicle activity for the Phase 2 use including the three turf soccer fields would be 196 trips (94 in and 102 out). The peak hour is estimated to be 2:20 to 3:20pm. Similar peak volumes occur around the 12:30 to 1:30 hour as well.

B. Trip Distribution and Assignment

The distribution estimates for the project assume slighting different percentages to outlying areas for the weekday practices and the Saturday games. Weekday practices assume all of the trips come from the local surrounding residential areas. The Saturday distribution assumes trips arriving from a much larger area. Table 5 identifies the trip distribution percentage assumptions.

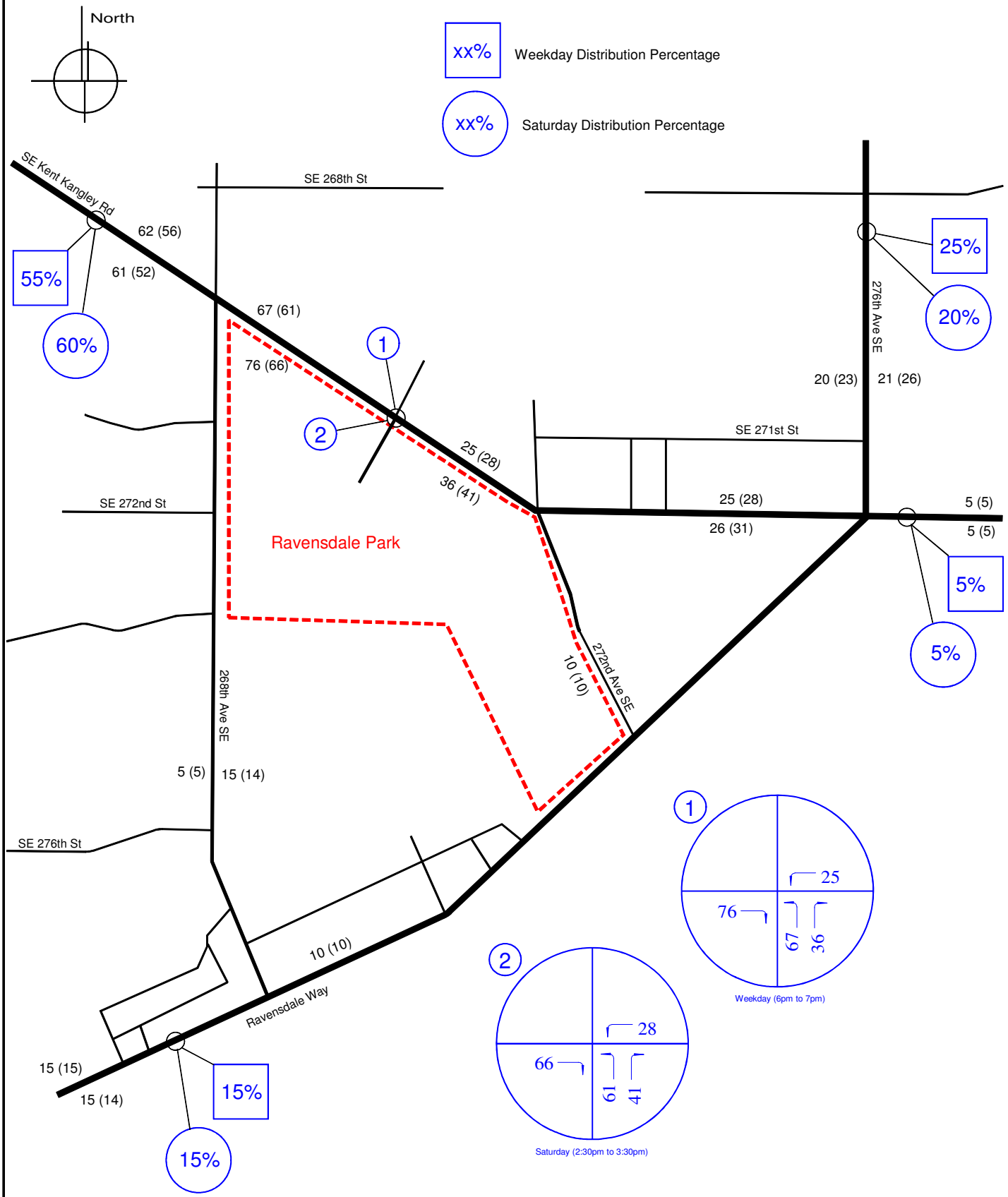
Table 5
Project Trip Distribution Percentage Estimates

Location (O/D) [a]	Weekday %	Saturday %
Kent Kangley Rd west of 268th Ave SE	60%	55%
Ravensdale Way SE west of 268th Ave SE	15%	15%
276th Ave SE north of Kent Kangley Rd	20%	25%
Kent Kangley Rd east of 276th Ave SE	5%	5%

a O/D = Origin/Destination

As shown in Table 5, there is only a slight difference assumed in distribution percentages. It was assumed slightly more trips would arrive from the greater eastside area with visiting teams from Issaquah/Bellevue/Redmond/North Bend etc. via 276th Ave SE for game days than what might be seen for practices by home teams. The same assumption was made for Kent Kangley Rd to the west with more visiting teams arriving from Kent/Auburn/Seattle areas for game days than would be true for home team practices. The local counts conducted at the surrounding area intersections for Saturday and Wednesday of late September and early October tend to support this presumption.

The distribution and assignment of project trips are shown in Figure 7.



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PROJECT TRIP DISTRIBUTION & ASSIGNMENT

Figure 7

Ravensdale Park
Phase 2

C. Future Year (Year 2015) Traffic Estimates

According to KC historical AWDT traffic count records, the traffic volumes on Kent Kangley Road west of 276th Ave SE have been in decline from 2007 to 2011 at an approximate rate of 3% per year. However, for this analysis, a conservative growth rate of 1% per year was assumed. The growth rate was applied to the west leg volumes from the Kent Kangley Rd/272nd Ave SE intersection turning movement counts taken in September and October of this year. The future year analysis includes level-of-service and turn lane warrant checks at the proposed site access to Kent Kangley Rd.

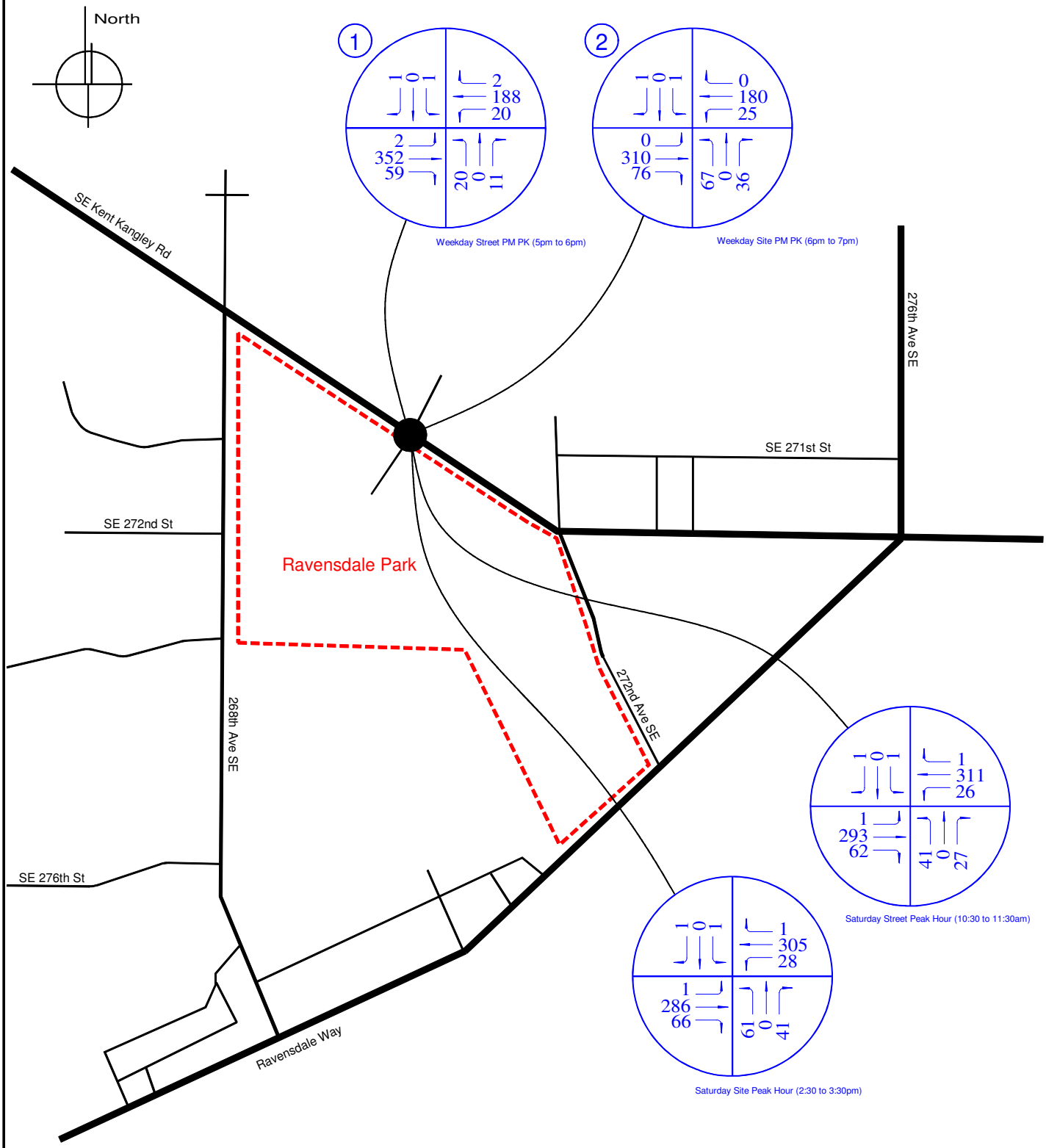
The horizon year volumes at the site access to Kent Kangley Road are shown in Figure 8. These volumes include four different conditions:

1. Condition 1: Average weekday street PM peak hour. The peak volume of Kent Kangley Road in the vicinity of the proposed site access estimated to occur between 5 and 6pm. The two way volume estimated at 620 vph. The corresponding site access peak hour volume utilized peaked a little earlier but was determined to be appropriate for analysis purposes.
2. Condition 2: The site PM peak hour volume scenario for an average weekday period. The site peak estimated to occur around 6pm to 7pm. The volume on Kent Kangley Rd was estimated to be approximately 3% less than the peak hour volume. The two way volume was estimated at 590 vph.
3. Condition 3: The Saturday street peak hour. The peak volume of Kent Kangley Road was estimated to occur between 10:30 and 11:30 am, with the two way volume estimated at approximately 700 vph. The site access volume is estimated to be 80% of what it is at site peak (156 vph vs 196 vph).
4. Condition 4: The Saturday site peak hour. The peak volume of Kent Kangley Road is estimated to be 685 vph, thus only about 2% lower than the peak time. The site peak as noted above occurs beginning at 2:30 pm.

D. Level of Service Analysis

The level-of-service for the four site access conditions were calculated using the Trafficware Synchro intersection analysis software. It should be noted that both software packages and summary results are per the HCM signalized and unsignalized methodology.

The results are shown in Table 6. Note the delay presented for unsignalized intersections represents the delay for the critical approach or movement and not the overall intersection.



xx - 2015 PK HOUR

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HORIZON YEAR TRAFFIC VOLUMES at Proposed Site Access

Figure 8

Ravensdale Park
Phase 2

Table 6
Site Access Level of Service

Condition	Approach/ Movement	2015 with project LOS (Delay) [a]
#1 – Weekday Street Peak [b]	WB Left Turn	A (1.4)
	NB Left Turn	B (14.1)
	NB Right Turn	B (10.6)
#2 – Weekday Site Peak [b]	WB Left Turn	A (1.8)
	NB Left Turn	C (15.8)
	NB Right Turn	B (10.6)
#3 – Saturday Street Peak [c]	WB Left Turn	A (1.3)
	NB Left Turn	C (16.9)
	NB Right Turn	B (10.3)
#4 – Saturday Site Peak [c]	WB Left Turn	A (1.4)
	NB Left Turn	C (18.0)
	NB Right Turn	B (10.4)

a delay is represented in seconds per vehicle. Analysis assumes a side street left turn and right turn pockets as well as a short right turn pocket eastbound.
b Street peak hour from 5pm to 6pm. Site peak hour assumed between 6pm and 7pm
c Street peak hour from 10:30am to 11:30 am. Site peak hour estimated to be between 2:30pm and 3:30 pm

As shown in Table 6, the site access driveway operates at acceptable levels of service for all of the four conditions tested. The worst case is the Saturday Site Peak (2:30 to 3:30pm), where the northbound left turn movement is estimated at LOS C with an average delay of 18 seconds per vehicle. The right turn movement is estimated to operate at LOS B for all cases.

A 1-hour simulation analysis of the intersections indicated that the 95th percentile queue for the northbound left turn pocket is 59 feet. The northbound right turn queue is estimated at 35 feet. Typically, a minimum turn pocket length for this condition is recommended at 100 feet to account for unexpected peaking conditions.

A summary of the level of service calculations are attached in the appendix.

E. Entering Sight Distance Analysis (at Proposed Site Access)

A sight distance analysis for "Entering Sight Distance" (ESD) was evaluated at the project's proposed driveway. The minimum acceptable values for intersection sight distance are shown in Table 7. These values are per the 2007 King County Road Standards. ESD deals with sight distance for vehicles approaching and exiting intersections. ESD is based on an entering vehicle eye height of 3.5 feet and an approaching vehicle height of 4.25 feet. The driver's eye setback distance is assumed to be 10 feet back from edge of traveled way for rural settings.

ESD generally deals with the ability of side street entering, crossing, and mainline left-turning, motorists to see oncoming vehicles and to successfully make entering, crossing, or exiting maneuvers without significantly impeding the speed of the mainline traffic. As a result, the intersection sight distance for this condition relates more to driver comfort and roadway level-of-service rather than safety.

Stopping Sight Distance (SSD) is the basic safety threshold for geometric designs of streets and highways. It is that distance required for a driver to see and react to an obstruction in his path with sufficient time to make a full braking effort stop.

Table 7 identifies both the SSD and ESD, required and available, for the proposed new park driveway.

Table 7
Intersection Sight Distance [a]

Design Speed (mph)	Stopping Sight Distance (ft) Required	Stopping Sight Distance (ft) Available	Entering Sight Distance (ft) Required	Entering Sight Distance (ft) Available
Kent Kangley Rd/Proposed Site Access				
45	360	725 [b] / 870 [c]	500	725 [d] / 870 [e]
50	425	725 [b] / 870 [c]	555	725 [d] / 870 [e]
55	495	725 [b] / 870 [c]	610	725 [d] / 870 [e]

[a] SSD and ESD based on 2007 KCRS; Table 2.1
[b] Available SSD approaching from the east (+/-)
[c] Available SSD approaching from the west (+/-) as measured from the 268th Ave SE intersection, actual distance extends beyond intersection.
[d] Available ESD looking east from driveway (for left turn out or crossing movement).
[e] Available ESD looking west (for left for left turn out, crossing movement or right turn out). Distance measured to the 268th Ave SE intersection. Actual distance extends west beyond this intersection.

Due to the relatively flat profile of Kent Kangley Road, the SSD observed is generally the same as or longer than the ESD observed. Since the observed distances easily exceed the threshold values, fine tuning the SSD or ESD beyond the adjacent intersections was determined to be not necessary.

The posted speed varies by direction for eastbound and westbound. The eastbound speed limit is 35 mph just east of the proposed driveway (reduced from 45 mph to the west), and the westbound posted speed is 45 mph west of 272nd Ave SE and 35 mph east of it. The 85th percentile speed eastbound is 45.8 mph. The 85th percentile speed westbound is 49.1 mph. Thus, based on this, the appropriate design speed could be 50 mph both directions. The available SSD and ESD exceed the minimum requirements based on this design speed. They also exceed the 55 mph minimum requirements.

F. Left and Right Turn Pocket Warrant Analysis

A turn lane warrant analysis was conducted at the proposed site access for the four conditions noted earlier: Weekday Street Peak, Weekday Site Peak, Saturday Street Peak, and Saturday Site Peak.

The left turn lane warrants were conducted in accordance with Highway Research Record Transportation Research Board Article #211 (HRR TRB #211). The results are shown in Table 8.

Table 8
Left Turn Lane Warrant Results

Condition	KKR Volume Bothways	Westbound Left Turn Volume	Utilization Factor	HRR TRB 211 UF Threshold [a]
#1 – Weekday Street Peak [b]	619	20	0.0057	0.0175
#2 – Weekday Site Peak [b]	591	25	0.0065	0.0175
#3 – Saturday Street Peak [c]	692	26	0.0110	0.0175
#4 – Saturday Site Peak [c]	685	28	0.0115	0.0175

a assumes a design speed of 45mph on Kent Kangley Rd
b Street peak hour from 5pm to 6pm. Site peak hour assumed between 6pm and 7pm
c Street peak hour from 10:30am to 11:30 am. Site peak hour estimated to be between 2:30pm and 3:30 pm

As shown in this table, a left turn lane is not warranted for any of the four conditions depicted.

A right turn lane/taper/pocket evaluation was also conducted for the eastbound approach at the site access intersection. The evaluation was based on WSDOT criteria. The results suggest that a right turn pocket or taper would be required in all instances.

IV. Parking (On Site)

The proposed parking design for the Phase 2 development would include approximately 153 new parking stalls. In addition, the project would also be expanding the existing parking lot at the northeast end to accommodate an additional 23 stalls.

In general, parking requirements for athletic fields within King County jurisdiction are left to the discretion of the design team. By way of comparison to existing King County athletic field parks parking supply is generally provided at a rate of 40 stalls per field.

A benefit of the detailed trip generation analysis was that parking demand could be determined every 10 minutes given the entering and exiting assumptions.

For the average weekday practice scenario, the peak parking demand is estimated to be 143 vehicles. This demand is estimated to occur for a short duration of time. Figure 9 below shows the estimated parking demand over the course of an average weekday period in the Fall. It includes one practice on the baseball field. It is important to note that the demand estimated could be somewhat spread out to the existing north east lot given that some of the vehicles using the Turf Field 1 or the baseball field will likely spread out between the two lots. Nevertheless, the peak parking estimate is less than the proposed supply for the new center parking lot.

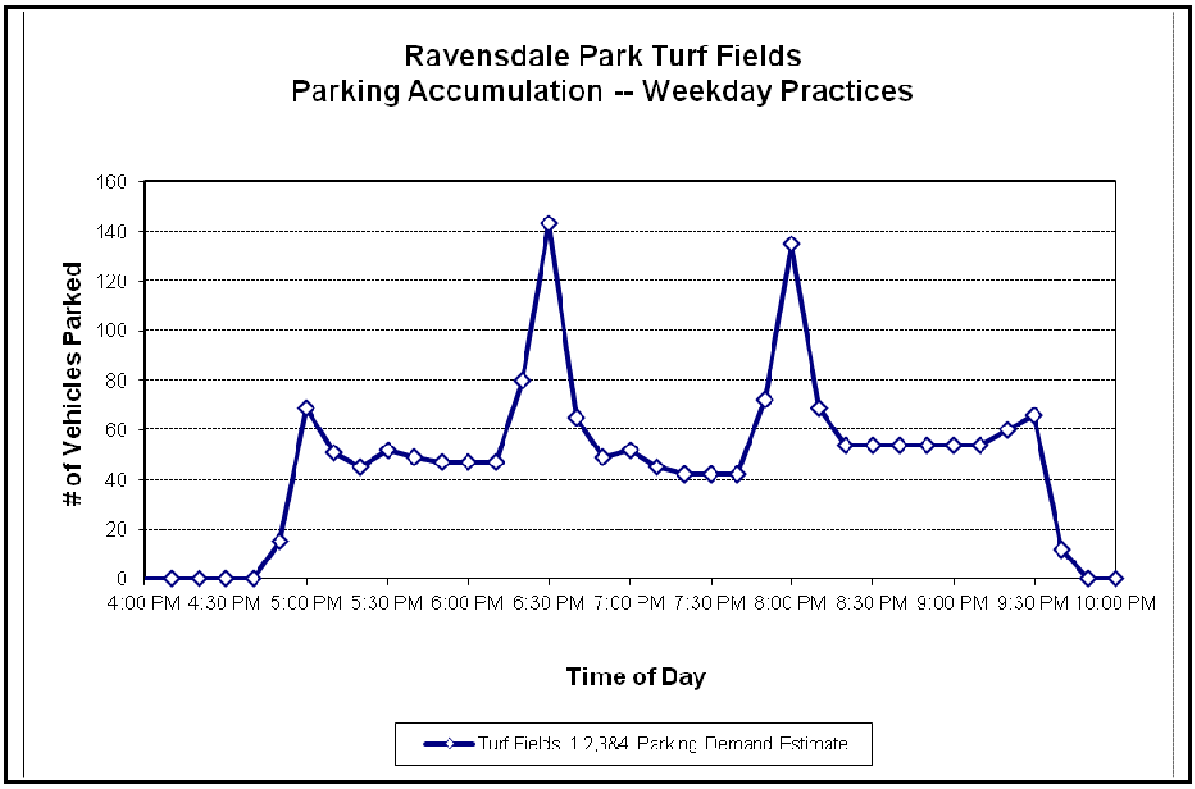

Figure 9

For the Saturday game day scenario in the Fall, the peak parking demand is estimated to be 135 vehicles. This estimate assumes no overlapping baseball activity on Saturdays in the Fall. Figure 10 depicts the parking demand accumulation estimate for Saturdays.

Again, it is important to note that the demand estimated could be somewhat spread out to the existing north east lot given that some of the vehicles using the Turf Field 1 or the baseball field will likely spread out between the two lots. Regardless, the parking demand for Saturday is estimated to be less than the proposed supply.

Some spiking may occur with parking demand depending on the scheduling of games between fields. The field's schedules should be planned to have alternating start and end times to prevent peak arrival and departures.

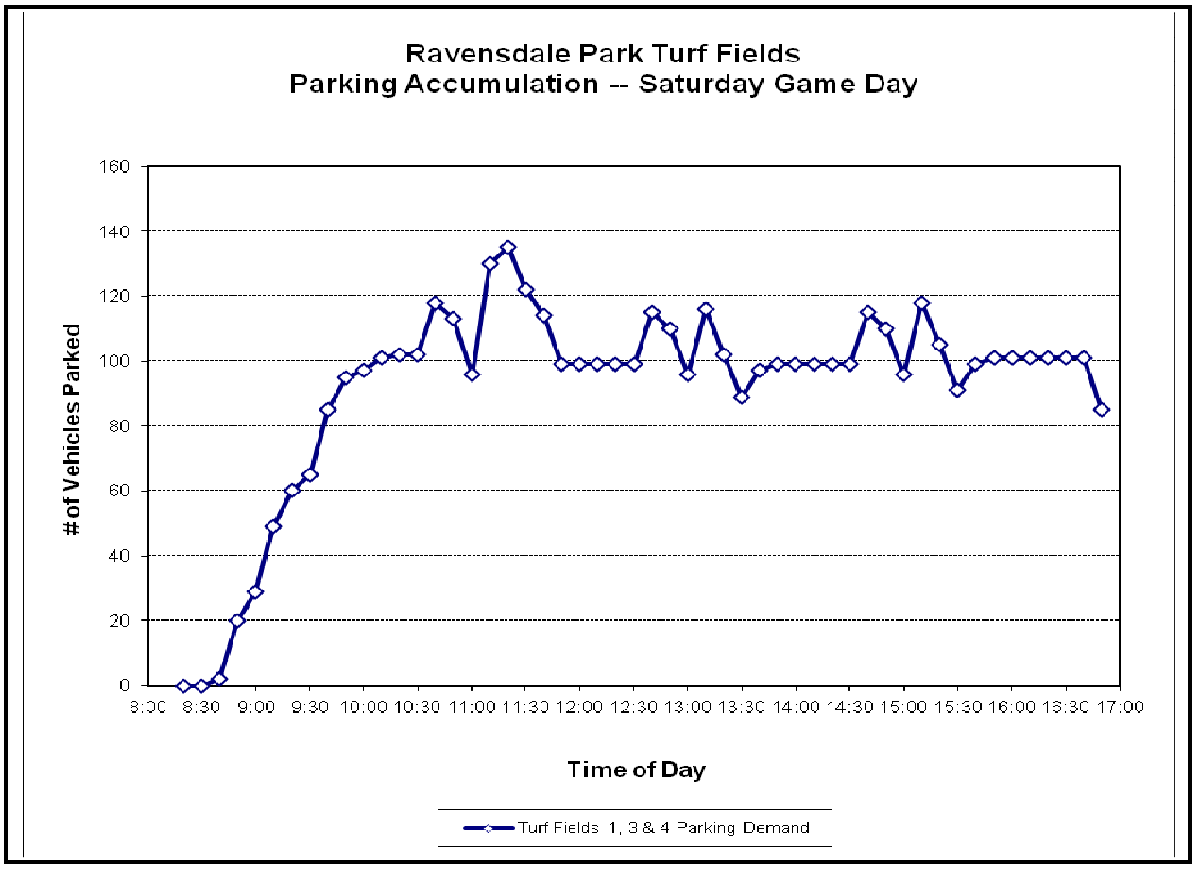

Figure 10

V. Summary

Ravensdale Park as part of its master plan is moving forward with Phase 2 of the park development. This would include two additional multi-purpose soccer/baseball/lacrosse fields in the northwest portion of the park. That area is currently vacant and clear of any significant vegetation. The project would include a pedestrian trail around both fields. The fields will be constructed with artificial turf and both fields will be lighted. In addition, new restrooms and a snack bar will be constructed

A new parking area with approximately 153 parking stalls will be constructed between the existing turf fields and the new fields. This parking lot will be designed with a new access to Kent Kangley Road. It is proposed to be located directly opposite and align with the existing commercial driveway on the north side. This will be the sole general purpose access. An emergency access will likely extend to the west to 268th Ave SE.

The existing parking lot at the northeast end of the site is proposed to be expanded 23 stalls as part of this Phase 2 development.

A. Trip Generation, Trip Distribution & Assignment

The project is estimated to generate an approximately 200 vehicles per hour at site peak times. For average weekday conditions, which would include multiple team practices, the peak hour is estimated between 6pm and 7pm. For Saturdays, it is estimated that there would be numerous games occurring on the three fields. The peak hour volume is estimated to occur during the early afternoon, primarily dependent on the ultimate schedule of games. The baseball field is assumed to be used for practice during the week coinciding with soccer practices, however, any Fall baseball games are likely to occur on Sundays to avoid peak soccer game day situations.

The distribution and assignment of project trips estimates assumes most will be to and from the west on Kent Kangley Road.

B. Level of Service

The analysis reviewed level of service operations for future 2015 under four different conditions at the site access: 1) weekday street peak, 2) weekday site peak, 3) Saturday street peak, and 4) Saturday site peak. The results of the analysis indicate the site access will operate at LOS C or better in all cases. The left turn out is the worst case movement.

C. Site Access Sight Distance

The stopping and entering sight distance is estimated to be more than adequate (exceeds minimum thresholds) at the proposed site access driveway.

D. Site Access Driveway Design

Based the level of service analysis, queuing summaries, left and right turn warrants, it is recommended that the site access intersection include an eastbound right turn taper. A left turn pocket is not required per warrants. Access to Kent Kangley for the proposed site access is recommended to include left and shared thru/right approach. The left turn pocket on the access driveway should be a minimum of 100 feet in length. Furthermore, the driveway should align with the commercial driveway on the opposite side of Kent Kangley Road.

E. Parking

The Phase 2 development is proposing to provide 153 stalls between the existing turf fields and the proposed turf fields. Peak demand is estimated to be 143 vehicles for weekday practice conditions and 135 vehicles for Saturday game days. The development is also proposing to expand the existing parking lot on the northeast end by 23 stalls, thus the new total for this lot would be 67 stalls. The grand total parking supply at the north end would be 220 stalls.

The trip generation estimates conducted at 10-minute intervals allowed for identifying parking demand at that same time interval. It is important to note that the trip generation analysis (and thus subsequent parking findings) assumed varying game time starts for Saturday conditions to reduce high peaking conditions as best possible.

As a general rule of thumb based on parking supply observations at other King County ballparks, it appears the parking rate is generally 40 stalls per field. There are 4 fields in total thus parking supply should be in the order of 160 stalls. Given that 220 stalls are provided, this should be adequate to account for the overlap that occurs between practice time and game times.

F. Other Considerations

The majority of the traffic entering and exiting the new facility will be predominantly kids and parents. The posted speed on Kent Kangley Road in the vicinity of the proposed access varies by direction. In the eastbound direction, the speed limit is 35 mph just past the proposed access, with speed reduction sign to the west. In the westbound direction, the posted speed limit is 45 mph just past 272nd Ave SE. Given the fact there will be a noticeable increase in turning traffic on Kent Kangley Road at the proposed site access, it is recommended that the County extend the 35 mph zone to the west closer to 268th Ave SE to provide a safer feel for the motorists in that vicinity.

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TECHNICAL APPENDIX

for

Ravensdale Park – Phase 2 Development

November 30*, 2012*

CONTENTS:

- Traffic Counts
- Field Use Estimates
- Level of Service Analyses
- Left Turn Lane Warrants

14-400 Building • Suite 206 • 14400 Bel-Red Road • Bellevue, WA 98007

TRAFFIC DATA GATHERING

Lake Stevens, WA Tel: (425) 334-3348
e-mail: CarlaN@TrafficDataGathering.com

Location:: Kent-Kangley Road w/o 272nd Avenue SE
City, State:: Ravensdale, WA
Counter #:: NT-0122

Site: 12-112-132 EB
Date: 7/12/2012
Thursday

24 Hour Speed
Channel: EB

mph	Total	0 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 200	Avg
12:00 AM	21	0	0	0	0	0	9	9	2	1	0	0	0	0	40.8
1:00 AM	6	0	0	0	0	0	2	4	0	0	0	0	0	0	41.1
2:00 AM	7	0	0	0	1	0	2	3	1	0	0	0	0	0	39.4
3:00 AM	6	0	0	0	0	0	4	2	0	0	0	0	0	0	38.6
4:00 AM	5	0	0	0	1	1	0	2	1	0	0	0	0	0	39.0
5:00 AM	26	1	0	1	0	2	6	6	9	1	0	0	0	0	40.8
6:00 AM	73	0	1	0	0	3	25	25	17	2	0	0	0	0	41.2
7:00 AM	115	0	1	1	1	2	19	43	34	11	3	0	0	0	43.8
8:00 AM	119	1	0	0	0	11	38	42	20	6	1	0	0	0	41.2
9:00 AM	128	0	0	0	1	6	36	49	32	4	0	0	0	0	41.9
10:00 AM	171	2	0	0	4	19	70	51	21	4	0	0	0	0	39.6
11:00 AM	191	2	0	1	2	11	80	57	30	6	1	1	0	0	40.5
12:00 PM	204	1	1	2	1	4	69	88	34	4	0	0	0	0	41.1
1:00 PM	234	1	1	0	0	18	82	103	27	2	0	0	0	0	40.5
2:00 PM	217	2	0	2	2	4	61	108	33	3	2	0	0	0	41.3
3:00 PM	251	2	3	0	1	14	92	106	29	2	1	1	0	0	40.1
4:00 PM	297	2	0	0	2	5	109	126	46	6	0	0	1	0	41.2
5:00 PM	279	3	0	1	3	17	88	123	35	9	0	0	0	0	40.6
6:00 PM	255	4	0	2	0	19	102	99	23	5	1	0	0	0	39.9
7:00 PM	209	5	1	0	2	7	88	71	30	5	0	0	0	0	39.9
8:00 PM	150	0	0	0	1	14	43	52	33	5	2	0	0	0	41.6
9:00 PM	113	1	0	0	0	5	52	39	13	3	0	0	0	0	40.3
10:00 PM	60	0	0	0	1	5	21	21	10	2	0	0	0	0	40.7
11:00 PM	55	0	0	0	0	4	19	23	8	1	0	0	0	0	40.9
Total	3192	27	8	10	23	171	1117	1252	488	82	11	2	1	0	40.8
%		0.8	0.3	0.3	0.7	5.4	35.0	39.2	15.3	2.6	0.3	0.1	0.0	0.0	

Percentile Speeds	10 %	15 %	50 %	85 %	90 %
(mph)	35.6	36.5	40.9	45.5	46.8

10 mph Pace Speed 35.5 - 45.5
Number in Pace 2412 (75.6 %)

Average 40.8 mph
Minimum 5.4 mph
Maximum 69.7 mph

Speeds Exceeded	45 mph	55 mph	65 mph
	18.3 %	0.4 %	0.0 %
Count	584	14	1

TRAFFIC DATA GATHERING

Lake Stevens, WA Tel: (425) 334-3348
e-mail: CarlaN@TrafficDataGathering.com

Location:: Kent-Kangley Road w/o 272nd Avenue SE
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Counter #:: NT-0122

Site: 12-112-132 EB
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Channel: EB

mph	Total	0 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 200	Avg
12:00 AM	22	0	0	0	0	2	7	8	2	3	0	0	0	0	41.8
1:00 AM	11	0	0	0	0	4	4	2	0	1	0	0	0	0	37.8
2:00 AM	9	0	0	0	0	2	1	3	3	0	0	0	0	0	42.0
3:00 AM	7	0	0	0	0	0	4	2	1	0	0	0	0	0	41.6
4:00 AM	4	0	0	0	0	0	3	1	0	0	0	0	0	0	38.2
5:00 AM	20	1	0	1	0	1	2	4	9	2	0	0	0	0	42.6
6:00 AM	53	0	1	0	1	3	10	21	15	0	2	0	0	0	42.1
7:00 AM	94	0	1	0	3	4	28	36	20	2	0	0	0	0	40.9
8:00 AM	106	0	0	1	1	15	37	33	16	2	0	0	1	0	40.4
9:00 AM	107	0	0	0	3	13	29	37	17	7	1	0	0	0	41.1
10:00 AM	122	0	0	2	0	14	28	57	19	2	0	0	0	0	40.9
11:00 AM	136	0	2	1	2	10	33	56	29	3	0	0	0	0	40.9
12:00 PM	170	1	0	0	1	14	58	63	30	2	0	1	0	0	40.9
1:00 PM	176	0	0	0	2	9	57	85	18	5	0	0	0	0	41.2
2:00 PM	211	1	0	0	3	13	67	93	30	4	0	0	0	0	40.8
3:00 PM	249	1	0	0	2	16	98	90	37	4	1	0	0	0	40.8
4:00 PM	253	0	0	0	1	12	64	111	60	4	1	0	0	0	41.9
5:00 PM	244	0	0	0	5	19	80	100	35	5	0	0	0	0	40.6
6:00 PM	199	2	0	0	2	15	63	87	28	2	0	0	0	0	40.5
7:00 PM	170	0	0	0	0	17	32	63	48	6	2	0	0	2	42.8
8:00 PM	126	0	0	0	0	4	34	54	28	5	1	0	0	0	42.5
9:00 PM	130	0	0	0	1	10	66	42	11	0	0	0	0	0	39.7
10:00 PM	86	0	0	0	0	7	31	29	15	4	0	0	0	0	41.1
11:00 PM	63	0	0	0	0	4	18	28	9	2	0	0	1	1	42.5
Total	2768	6	4	5	27	208	854	1105	480	65	8	1	2	3	41.1
%		0.2	0.1	0.2	1.0	7.5	30.9	39.9	17.3	2.3	0.3	0.0	0.1	0.1	

Percentile Speeds	10 %	15 %	50 %	85 %	90 %
(mph)	35.5	36.5	41.2	46.0	46.9

10 mph Pace Speed 36.5 - 46.5
Number in Pace 2027 (73.2 %)

Average 41.1 mph
Minimum 5.2 mph
Maximum 81.2 mph

Speeds Exceeded	45 mph	55 mph	65 mph
	20.2 %	0.5 %	0.2 %
Count	559	14	5

TRAFFIC DATA GATHERING

Lake Stevens, WA Tel: (425) 334-3348
e-mail: CarlaN@TrafficDataGathering.com

Location:: Kent-Kangley Road w/o 272nd Avenue SE
City, State:: Ravensdale, WA
Counter #:: NT-0122

Site: 12-112-132 EB
Date: 7/14/2012
Saturday

24 Hour Speed
Channel: EB

mph	Total	0 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 200	Avg
12:00 AM	43	0	0	0	0	6	13	14	9	1	0	0	0	0	40.4
1:00 AM	23	0	0	0	0	1	9	7	5	1	0	0	0	0	41.6
2:00 AM	10	0	0	0	0	2	4	4	0	0	0	0	0	0	39.2
3:00 AM	9	0	0	0	0	1	4	1	3	0	0	0	0	0	39.4
4:00 AM	9	0	0	0	0	3	2	2	2	0	0	0	0	0	39.4
5:00 AM	5	0	0	0	0	0	1	2	0	1	1	0	0	0	46.8
6:00 AM	22	0	0	0	0	2	9	6	5	0	0	0	0	0	41.0
7:00 AM	85	0	0	0	0	8	30	26	19	1	0	0	0	1	41.4
8:00 AM	93	0	0	0	1	7	32	39	11	3	0	0	0	0	40.8
9:00 AM	152	1	0	2	0	13	38	63	26	9	0	0	0	0	41.4
10:00 AM	177	5	0	0	0	9	61	63	32	6	1	0	0	0	40.6
11:00 AM	189	0	0	1	2	20	58	81	23	4	0	0	0	0	40.5
12:00 PM	211	2	1	0	3	11	72	92	23	4	2	0	0	1	40.6
1:00 PM	177	0	1	1	1	12	52	83	22	4	0	1	0	0	41.3
2:00 PM	229	0	0	1	0	19	78	84	32	13	2	0	0	0	41.3
3:00 PM	220	1	0	0	1	8	77	93	37	2	1	0	0	0	41.1
4:00 PM	208	0	0	0	1	16	65	96	28	2	0	0	0	0	40.9
5:00 PM	183	4	0	0	0	9	50	77	35	7	0	1	0	0	41.4
6:00 PM	174	0	1	2	0	12	50	59	40	9	1	0	0	0	41.8
7:00 PM	162	0	0	1	0	8	55	62	29	7	0	0	0	0	41.4
8:00 PM	116	0	0	0	0	3	39	42	26	3	3	0	0	0	42.1
9:00 PM	79	0	0	0	0	7	27	27	15	2	1	0	0	0	41.7
10:00 PM	83	0	1	0	0	10	37	22	12	1	0	0	0	0	39.7
11:00 PM	48	0	0	0	0	2	19	15	10	2	0	0	0	0	41.8
Total	2707	13	4	8	9	189	882	1060	444	82	12	2	0	2	41.1
%		0.5	0.1	0.3	0.3	7.0	32.6	39.2	16.4	3.0	0.4	0.1	0.0	0.1	

Percentile Speeds	10 %	15 %	50 %	85 %	90 %
(mph)	35.5	36.5	41.1	45.9	47.3

10 mph Pace Speed 35.8 - 45.8
Number in Pace 1989 (73.5 %)

Average 41.1 mph
Minimum 5.1 mph
Maximum 88.7 mph

Speeds Exceeded	45 mph	55 mph	65 mph
	20.0 %	0.6 %	0.1 %
Count	542	16	2

TRAFFIC DATA GATHERING

Lake Stevens, WA Tel: (425) 334-3348
e-mail: CarlaN@TrafficDataGathering.com

Location:: Kent-Kangley Road w/o 272nd Avenue SE
City, State:: Ravensdale, WA
Counter #:: NT-0124

Site: 12-112-132 WB
Date: 7/12/2012
Thursday

24 Hour Volume, per Channel

Channel: WB

Interval Begin			Interval Begin		
12:00 AM	3	16	12:00 PM	48	210
12:15 AM	5		12:15 PM	64	
12:30 AM	5		12:30 PM	39	
12:45 AM	3		12:45 PM	59	
1:00 AM	2	8	1:00 PM	50	203
1:15 AM	2		1:15 PM	44	
1:30 AM	1		1:30 PM	51	
1:45 AM	3		1:45 PM	58	
2:00 AM	4	13	2:00 PM	50	190
2:15 AM	5		2:15 PM	54	
2:30 AM	2		2:30 PM	33	
2:45 AM	2		2:45 PM	53	
3:00 AM	0	9	3:00 PM	42	213
3:15 AM	5		3:15 PM	54	
3:30 AM	2		3:30 PM	52	
3:45 AM	2		3:45 PM	65	
4:00 AM	10	61	4:00 PM	69	216
4:15 AM	22		4:15 PM	48	
4:30 AM	10		4:30 PM	47	
4:45 AM	19		4:45 PM	52	
5:00 AM	31	139	5:00 PM	61	183
5:15 AM	42		5:15 PM	42	
5:30 AM	36		5:30 PM	40	
5:45 AM	30		5:45 PM	40	
6:00 AM	34	175	6:00 PM	54	213
6:15 AM	44		6:15 PM	51	
6:30 AM	43		6:30 PM	49	
6:45 AM	54		6:45 PM	59	
7:00 AM	41	164	7:00 PM	62	187
7:15 AM	42		7:15 PM	51	
7:30 AM	39		7:30 PM	38	
7:45 AM	42		7:45 PM	36	
8:00 AM	44	196	8:00 PM	47	175
8:15 AM	56		8:15 PM	55	
8:30 AM	51		8:30 PM	35	
8:45 AM	45		8:45 PM	38	
9:00 AM	42	174	9:00 PM	31	119
9:15 AM	34		9:15 PM	44	
9:30 AM	47		9:30 PM	25	
9:45 AM	51		9:45 PM	19	
10:00 AM	41	198	10:00 PM	11	46
10:15 AM	52		10:15 PM	12	
10:30 AM	53		10:30 PM	12	
10:45 AM	52		10:45 PM	11	
11:00 AM	65	228	11:00 PM	3	16
11:15 AM	60		11:15 PM	7	
11:30 AM	56		11:30 PM	3	
11:45 AM	47		11:45 PM	3	

	WB
24 Hour Volume	3352

12:00 AM - 12:00 PM	
	WB
Count	1381
Peak Hour	10:45 AM
Volume	233
Factor	0.90

12:00 PM - 12:00 AM	
	WB
	1971
	3:15 PM
	240
	0.87

TRAFFIC DATA GATHERING

Lake Stevens, WA Tel: (425) 334-3348
e-mail: CarlaN@TrafficDataGathering.com

Location:: Kent-Kangley Road w/o 272nd Avenue SE
City, State:: Ravensdale, WA
Counter #:: NT-0124

Site: 12-112-132 WB
Date: 7/13/2012
Friday

24 Hour Volume, per Channel

Channel: WB

Interval Begin			Interval Begin		
12:00 AM	5	9	12:00 PM	36	165
12:15 AM	2		12:15 PM	39	
12:30 AM	1		12:30 PM	51	
12:45 AM	1		12:45 PM	39	
1:00 AM	2	10	1:00 PM	47	185
1:15 AM	5		1:15 PM	43	
1:30 AM	1		1:30 PM	42	
1:45 AM	2		1:45 PM	53	
2:00 AM	4	12	2:00 PM	41	161
2:15 AM	3		2:15 PM	31	
2:30 AM	1		2:30 PM	41	
2:45 AM	4		2:45 PM	48	
3:00 AM	5	17	3:00 PM	49	200
3:15 AM	2		3:15 PM	49	
3:30 AM	6		3:30 PM	44	
3:45 AM	4		3:45 PM	58	
4:00 AM	14	55	4:00 PM	49	178
4:15 AM	16		4:15 PM	43	
4:30 AM	10		4:30 PM	52	
4:45 AM	15		4:45 PM	34	
5:00 AM	36	132	5:00 PM	57	157
5:15 AM	36		5:15 PM	37	
5:30 AM	26		5:30 PM	32	
5:45 AM	34		5:45 PM	31	
6:00 AM	25	159	6:00 PM	42	168
6:15 AM	44		6:15 PM	38	
6:30 AM	37		6:30 PM	50	
6:45 AM	53		6:45 PM	38	
7:00 AM	41	147	7:00 PM	35	122
7:15 AM	41		7:15 PM	33	
7:30 AM	28		7:30 PM	22	
7:45 AM	37		7:45 PM	32	
8:00 AM	31	158	8:00 PM	26	113
8:15 AM	42		8:15 PM	37	
8:30 AM	51		8:30 PM	23	
8:45 AM	34		8:45 PM	27	
9:00 AM	42	155	9:00 PM	25	80
9:15 AM	42		9:15 PM	22	
9:30 AM	30		9:30 PM	19	
9:45 AM	41		9:45 PM	14	
10:00 AM	50	196	10:00 PM	15	51
10:15 AM	42		10:15 PM	10	
10:30 AM	51		10:30 PM	16	
10:45 AM	53		10:45 PM	10	
11:00 AM	41	182	11:00 PM	9	32
11:15 AM	52		11:15 PM	9	
11:30 AM	33		11:30 PM	8	
11:45 AM	56		11:45 PM	6	

	WB
24 Hour Volume	2844

12:00 AM - 12:00 PM	WB
Count	1232
Peak Hour	10:30 AM
Volume	197
Factor	0.93

12:00 PM - 12:00 AM	WB
	1612
	3:45 PM
	202
	0.87

TRAFFIC DATA GATHERING

Lake Stevens, WA Tel: (425) 334-3348
e-mail: CarlaN@TrafficDataGathering.com

Location:: Kent-Kangley Road w/o 272nd Avenue SE
City, State:: Ravensdale, WA
Counter #:: NT-0124

Site: 12-112-132 WB
Date: 7/14/2012
Saturday

24 Hour Volume, per Channel

Channel: WB

Interval Begin			Interval Begin		
12:00 AM	5	21	12:00 PM	67	216
12:15 AM	6		12:15 PM	48	
12:30 AM	7		12:30 PM	62	
12:45 AM	3		12:45 PM	39	
1:00 AM	2	13	1:00 PM	39	172
1:15 AM	3		1:15 PM	45	
1:30 AM	1		1:30 PM	42	
1:45 AM	7		1:45 PM	46	
2:00 AM	3	10	2:00 PM	45	180
2:15 AM	4		2:15 PM	41	
2:30 AM	0		2:30 PM	51	
2:45 AM	3		2:45 PM	43	
3:00 AM	4	12	3:00 PM	31	167
3:15 AM	3		3:15 PM	37	
3:30 AM	1		3:30 PM	50	
3:45 AM	4		3:45 PM	49	
4:00 AM	3	22	4:00 PM	54	187
4:15 AM	8		4:15 PM	48	
4:30 AM	1		4:30 PM	41	
4:45 AM	10		4:45 PM	44	
5:00 AM	3	26	5:00 PM	35	162
5:15 AM	7		5:15 PM	41	
5:30 AM	9		5:30 PM	40	
5:45 AM	7		5:45 PM	46	
6:00 AM	15	62	6:00 PM	51	162
6:15 AM	17		6:15 PM	45	
6:30 AM	11		6:30 PM	37	
6:45 AM	19		6:45 PM	29	
7:00 AM	26	101	7:00 PM	28	123
7:15 AM	23		7:15 PM	24	
7:30 AM	29		7:30 PM	33	
7:45 AM	23		7:45 PM	38	
8:00 AM	43	165	8:00 PM	38	151
8:15 AM	59		8:15 PM	39	
8:30 AM	28		8:30 PM	33	
8:45 AM	35		8:45 PM	41	
9:00 AM	38	169	9:00 PM	43	138
9:15 AM	47		9:15 PM	34	
9:30 AM	46		9:30 PM	36	
9:45 AM	38		9:45 PM	25	
10:00 AM	54	253	10:00 PM	32	70
10:15 AM	79		10:15 PM	18	
10:30 AM	64		10:30 PM	12	
10:45 AM	56		10:45 PM	8	
11:00 AM	40	194	11:00 PM	15	40
11:15 AM	56		11:15 PM	10	
11:30 AM	50		11:30 PM	8	
11:45 AM	48		11:45 PM	7	

	WB
24 Hour Volume	2816

12:00 AM - 12:00 PM	WB	**12:00 PM - 12:00 AM**	WB
Count	1048		1768
Peak Hour	10:00 AM		12:00 PM
Volume	253		216
Factor	0.80		0.81

TRAFFIC DATA GATHERING

Lake Stevens, WA Tel: (425) 334-3348
e-mail: CarlaN@TrafficDataGathering.com

Location:: Kent-Kangley Road w/o 272nd Avenue SE
City, State:: Ravensdale, WA
Counter #:: NT-0122

Site: 12-112-132 EB
Date: 7/12/2012
Thursday

24 Hour Volume, per Channel

Channel: EB

Interval Begin			Interval Begin		
12:00 AM	5	21	12:00 PM	47	204
12:15 AM	8		12:15 PM	46	
12:30 AM	4		12:30 PM	60	
12:45 AM	4		12:45 PM	51	
1:00 AM	2	6	1:00 PM	51	234
1:15 AM	2		1:15 PM	55	
1:30 AM	1		1:30 PM	60	
1:45 AM	1		1:45 PM	68	
2:00 AM	1	7	2:00 PM	48	217
2:15 AM	4		2:15 PM	48	
2:30 AM	1		2:30 PM	67	
2:45 AM	1		2:45 PM	54	
3:00 AM	2	6	3:00 PM	65	251
3:15 AM	0		3:15 PM	70	
3:30 AM	2		3:30 PM	56	
3:45 AM	2		3:45 PM	60	
4:00 AM	1	5	4:00 PM	66	297
4:15 AM	0		4:15 PM	57	
4:30 AM	2		4:30 PM	90	
4:45 AM	2		4:45 PM	84	
5:00 AM	3	26	5:00 PM	75	279
5:15 AM	6		5:15 PM	69	
5:30 AM	5		5:30 PM	79	
5:45 AM	12		5:45 PM	56	
6:00 AM	12	73	6:00 PM	80	255
6:15 AM	13		6:15 PM	76	
6:30 AM	23		6:30 PM	45	
6:45 AM	25		6:45 PM	54	
7:00 AM	28	115	7:00 PM	51	209
7:15 AM	32		7:15 PM	57	
7:30 AM	21		7:30 PM	46	
7:45 AM	34		7:45 PM	55	
8:00 AM	25	119	8:00 PM	38	150
8:15 AM	27		8:15 PM	36	
8:30 AM	35		8:30 PM	36	
8:45 AM	32		8:45 PM	40	
9:00 AM	32	128	9:00 PM	29	113
9:15 AM	39		9:15 PM	31	
9:30 AM	22		9:30 PM	27	
9:45 AM	35		9:45 PM	26	
10:00 AM	52	171	10:00 PM	13	60
10:15 AM	28		10:15 PM	23	
10:30 AM	41		10:30 PM	13	
10:45 AM	50		10:45 PM	11	
11:00 AM	39	191	11:00 PM	15	55
11:15 AM	49		11:15 PM	16	
11:30 AM	50		11:30 PM	15	
11:45 AM	53		11:45 PM	9	

	EB
24 Hour Volume	3192

12:00 AM - 12:00 PM	EB
Count	868
Peak Hour	11:00 AM
Volume	191
Factor	0.90

12:00 PM - 12:00 AM	EB
	2324
	4:30 PM
	318
	0.88

TRAFFIC DATA GATHERING

Lake Stevens, WA Tel: (425) 334-3348
e-mail: CarlaN@TrafficDataGathering.com

Location:: Kent-Kangley Road w/o 272nd Avenue SE
City, State:: Ravensdale, WA
Counter #:: NT-0122

Site: 12-112-132 EB
Date: 7/13/2012
Friday

24 Hour Volume, per Channel

Channel: EB

Interval Begin			Interval Begin		
12:00 AM	7	22	12:00 PM	43	170
12:15 AM	7		12:15 PM	46	
12:30 AM	4		12:30 PM	40	
12:45 AM	4		12:45 PM	41	
1:00 AM	5	11	1:00 PM	36	176
1:15 AM	3		1:15 PM	44	
1:30 AM	0		1:30 PM	50	
1:45 AM	3		1:45 PM	46	
2:00 AM	2	9	2:00 PM	57	211
2:15 AM	0		2:15 PM	41	
2:30 AM	0		2:30 PM	55	
2:45 AM	7		2:45 PM	58	
3:00 AM	1	7	3:00 PM	61	249
3:15 AM	2		3:15 PM	59	
3:30 AM	3		3:30 PM	61	
3:45 AM	1		3:45 PM	68	
4:00 AM	1	4	4:00 PM	65	253
4:15 AM	1		4:15 PM	61	
4:30 AM	1		4:30 PM	66	
4:45 AM	1		4:45 PM	61	
5:00 AM	2	20	5:00 PM	54	244
5:15 AM	6		5:15 PM	48	
5:30 AM	1		5:30 PM	78	
5:45 AM	11		5:45 PM	64	
6:00 AM	11	53	6:00 PM	53	199
6:15 AM	14		6:15 PM	51	
6:30 AM	12		6:30 PM	52	
6:45 AM	16		6:45 PM	43	
7:00 AM	26	94	7:00 PM	43	170
7:15 AM	16		7:15 PM	41	
7:30 AM	17		7:30 PM	40	
7:45 AM	35		7:45 PM	46	
8:00 AM	31	106	8:00 PM	41	126
8:15 AM	24		8:15 PM	29	
8:30 AM	25		8:30 PM	28	
8:45 AM	26		8:45 PM	28	
9:00 AM	22	107	9:00 PM	33	130
9:15 AM	29		9:15 PM	36	
9:30 AM	25		9:30 PM	32	
9:45 AM	31		9:45 PM	29	
10:00 AM	33	122	10:00 PM	24	86
10:15 AM	27		10:15 PM	21	
10:30 AM	29		10:30 PM	20	
10:45 AM	33		10:45 PM	21	
11:00 AM	32	136	11:00 PM	19	63
11:15 AM	30		11:15 PM	19	
11:30 AM	37		11:30 PM	17	
11:45 AM	37		11:45 PM	8	

	EB
24 Hour Volume	2768

12:00 AM - 12:00 PM	EB
Count	691
Peak Hour	11:00 AM
Volume	136
Factor	0.92

12:00 PM - 12:00 AM	EB
	2077
	3:45 PM
	260
	0.96

TRAFFIC DATA GATHERING

Lake Stevens, WA Tel: (425) 334-3348
e-mail: CarlaN@TrafficDataGathering.com

Location:: Kent-Kangley Road w/o 272nd Avenue SE
City, State:: Ravensdale, WA
Counter #:: NT-0122

Site: 12-112-132 EB
Date: 7/14/2012
Saturday

24 Hour Volume, per Channel

Channel: EB

Interval Begin			Interval Begin		
12:00 AM	8	43	12:00 PM	62	211
12:15 AM	16		12:15 PM	39	
12:30 AM	8		12:30 PM	63	
12:45 AM	11		12:45 PM	47	
1:00 AM	5	23	1:00 PM	48	177
1:15 AM	6		1:15 PM	36	
1:30 AM	5		1:30 PM	51	
1:45 AM	7		1:45 PM	42	
2:00 AM	2	10	2:00 PM	54	229
2:15 AM	4		2:15 PM	58	
2:30 AM	3		2:30 PM	71	
2:45 AM	1		2:45 PM	46	
3:00 AM	2	9	3:00 PM	57	220
3:15 AM	1		3:15 PM	65	
3:30 AM	3		3:30 PM	46	
3:45 AM	3		3:45 PM	52	
4:00 AM	5	9	4:00 PM	60	208
4:15 AM	3		4:15 PM	52	
4:30 AM	1		4:30 PM	53	
4:45 AM	0		4:45 PM	43	
5:00 AM	0	5	5:00 PM	56	183
5:15 AM	1		5:15 PM	41	
5:30 AM	1		5:30 PM	43	
5:45 AM	3		5:45 PM	43	
6:00 AM	1	22	6:00 PM	49	174
6:15 AM	3		6:15 PM	40	
6:30 AM	7		6:30 PM	38	
6:45 AM	11		6:45 PM	47	
7:00 AM	22	85	7:00 PM	61	162
7:15 AM	15		7:15 PM	35	
7:30 AM	22		7:30 PM	43	
7:45 AM	26		7:45 PM	23	
8:00 AM	39	93	8:00 PM	34	116
8:15 AM	12		8:15 PM	31	
8:30 AM	18		8:30 PM	30	
8:45 AM	24		8:45 PM	21	
9:00 AM	14	152	9:00 PM	21	79
9:15 AM	30		9:15 PM	19	
9:30 AM	41		9:30 PM	24	
9:45 AM	67		9:45 PM	15	
10:00 AM	52	177	10:00 PM	25	83
10:15 AM	34		10:15 PM	19	
10:30 AM	37		10:30 PM	25	
10:45 AM	54		10:45 PM	14	
11:00 AM	48	189	11:00 PM	15	48
11:15 AM	48		11:15 PM	12	
11:30 AM	40		11:30 PM	10	
11:45 AM	53		11:45 PM	11	

	EB
24 Hour Volume	2707

12:00 AM - 12:00 PM	EB
Count	817
Peak Hour	9:30 AM
Volume	194
Factor	0.72

12:00 PM - 12:00 AM	EB
	1890
	2:30 PM
	239
	0.84

TRAFFIC DATA GATHERING

Lake Stevens, WA Tel: (425) 334-3348
e-mail: CarlaN@TrafficDataGathering.com

Location:: Kent-Kangley Road w/o 272nd Avenue SE
City, State:: Ravensdale, WA
Counter #:: NT-0124

Site: 12-112-132 WB
Date: 7/12/2012
Thursday

24 Hour Speed
Channel: WB

mph	Total	0 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 200	Avg
12:00 AM	16	0	0	0	0	1	2	4	4	3	0	2	0	0	46.9
1:00 AM	8	0	0	0	0	0	2	3	3	0	0	0	0	0	43.9
2:00 AM	13	0	0	0	0	0	2	3	6	2	0	0	0	0	45.3
3:00 AM	9	0	0	0	0	1	2	2	4	0	0	0	0	0	42.8
4:00 AM	61	0	0	0	0	0	4	26	21	8	1	0	0	1	45.9
5:00 AM	139	0	0	0	0	1	5	50	53	24	6	0	0	0	46.6
6:00 AM	175	0	0	0	1	0	14	52	84	21	3	0	0	0	46.0
7:00 AM	164	1	0	1	1	0	10	40	65	35	11	0	0	0	46.8
8:00 AM	196	0	0	0	0	4	17	61	83	28	2	1	0	0	45.6
9:00 AM	174	0	0	0	0	3	20	80	65	4	1	1	0	0	44.1
10:00 AM	198	3	0	2	0	4	25	79	57	24	4	0	0	0	44.0
11:00 AM	228	2	1	0	0	5	31	80	88	16	4	1	0	0	44.1
12:00 PM	210	1	1	0	1	5	24	87	66	21	3	1	0	0	44.3
1:00 PM	203	4	0	0	0	7	19	76	80	16	1	0	0	0	43.9
2:00 PM	190	1	0	1	0	4	19	68	77	15	3	0	0	2	45.1
3:00 PM	213	2	0	1	3	4	28	63	88	20	3	1	0	0	44.5
4:00 PM	216	3	0	1	0	2	25	78	83	21	2	0	0	1	44.3
5:00 PM	183	1	0	0	3	3	18	70	62	19	5	1	0	1	44.9
6:00 PM	213	6	0	0	0	3	23	76	83	17	4	1	0	0	43.9
7:00 PM	187	4	1	1	0	4	46	71	50	8	1	1	0	0	42.2
8:00 PM	175	1	0	0	1	7	27	73	50	11	4	1	0	0	43.6
9:00 PM	119	0	0	0	0	2	19	53	36	6	2	1	0	0	43.6
10:00 PM	46	0	0	0	0	1	14	18	12	0	1	0	0	0	42.1
11:00 PM	16	0	0	0	0	1	3	4	4	3	1	0	0	0	45.1
Total	3352	29	3	7	10	62	399	1217	1224	322	62	12	0	5	44.5
%		0.9	0.1	0.2	0.3	1.8	11.9	36.3	36.5	9.6	1.8	0.4	0.0	0.1	

Percentile Speeds	10 %	15 %	50 %	85 %	90 %
(mph)	38.5	39.9	44.9	49.3	50.6

10 mph Pace Speed 40.0 - 50.0
Number in Pace 2452 (73.2 %)

Average 44.5 mph
Minimum 5.0 mph
Maximum 92.8 mph

Speeds Exceeded	45 mph	55 mph	65 mph
	48.5 %	2.4 %	0.1 %
Count	1625	79	5

TRAFFIC DATA GATHERING

Lake Stevens, WA Tel: (425) 334-3348
e-mail: CarlaN@TrafficDataGathering.com

Location:: Kent-Kangley Road w/o 272nd Avenue SE
City, State:: Ravensdale, WA
Counter #:: NT-0124

Site: 12-112-132 WB
Date: 7/13/2012
Friday

24 Hour Speed
Channel: WB

mph	Total	0 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 200	Avg
12:00 AM	9	0	0	0	0	0	2	5	0	2	0	0	0	0	43.0
1:00 AM	10	0	0	0	0	0	1	2	3	2	1	1	0	0	49.3
2:00 AM	12	0	0	0	0	0	3	6	2	1	0	0	0	0	43.1
3:00 AM	17	0	0	0	1	1	3	5	3	2	2	0	0	0	43.9
4:00 AM	55	0	0	0	0	1	6	14	26	7	0	0	0	1	45.9
5:00 AM	132	0	0	0	0	2	8	40	54	21	6	1	0	0	46.5
6:00 AM	159	0	0	0	0	2	10	52	70	21	4	0	0	0	45.9
7:00 AM	147	1	0	0	3	1	9	51	53	27	2	0	0	0	45.3
8:00 AM	158	1	0	1	0	3	22	60	58	12	1	0	0	0	44.1
9:00 AM	155	0	4	1	1	4	15	56	56	15	2	1	0	0	44.0
10:00 AM	196	0	0	2	1	7	28	76	67	11	2	1	1	0	43.9
11:00 AM	182	1	0	0	1	2	34	68	61	13	2	0	0	0	43.7
12:00 PM	165	0	0	0	0	6	17	53	70	18	1	0	0	0	44.8
1:00 PM	185	2	1	0	1	6	25	74	55	18	3	0	0	0	43.6
2:00 PM	161	0	0	0	1	1	12	72	56	15	4	0	0	0	45.0
3:00 PM	200	0	0	0	1	5	36	73	66	15	3	1	0	0	44.0
4:00 PM	178	0	0	0	1	5	17	73	65	13	4	0	0	0	44.4
5:00 PM	157	2	0	2	0	3	12	50	65	20	3	0	0	0	44.8
6:00 PM	168	4	0	0	0	2	21	66	57	15	1	2	0	0	43.8
7:00 PM	122	0	0	0	1	0	15	54	37	12	2	1	0	0	44.7
8:00 PM	113	0	0	0	0	6	30	37	33	6	1	0	0	0	42.8
9:00 PM	80	0	0	0	2	1	14	29	24	6	2	2	0	0	44.3
10:00 PM	51	0	0	0	0	0	10	26	13	2	0	0	0	0	42.9
11:00 PM	32	0	0	0	0	1	3	12	11	3	1	1	0	0	45.6
Total	2844	11	5	6	14	59	353	1054	1005	277	47	11	1	1	44.4
%		0.4	0.2	0.2	0.5	2.1	12.4	37.1	35.3	9.7	1.7	0.4	0.0	0.0	

Percentile Speeds	10 %	15 %	50 %	85 %	90 %
(mph)	38.8	39.8	44.6	49.2	50.3

10 mph Pace Speed 39.4 - 49.4
Number in Pace 2092 (73.6 %)

Average 44.4 mph
Minimum 5.0 mph
Maximum 75.7 mph

Speeds Exceeded	45 mph	55 mph	65 mph
	47.2 %	2.1 %	0.1 %
Count	1342	60	2

TRAFFIC DATA GATHERING

Lake Stevens, WA Tel: (425) 334-3348
e-mail: CarlaN@TrafficDataGathering.com

Location:: Kent-Kangley Road w/o 272nd Avenue SE
City, State:: Ravensdale, WA
Counter #:: NT-0124

Site: 12-112-132 WB
Date: 7/14/2012
Saturday

24 Hour Speed
Channel: WB

mph	Total	0 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 200	Avg
12:00 AM	21	0	0	0	0	1	4	6	9	1	0	0	0	0	44.1
1:00 AM	13	0	0	0	0	0	2	4	5	1	1	0	0	0	45.1
2:00 AM	10	0	0	0	0	0	1	3	4	2	0	0	0	0	45.6
3:00 AM	12	0	0	0	0	0	2	5	3	2	0	0	0	0	43.8
4:00 AM	22	0	0	0	0	0	4	9	6	3	0	0	0	0	44.5
5:00 AM	26	0	0	0	1	1	4	8	5	5	2	0	0	0	44.8
6:00 AM	62	0	0	0	1	0	9	21	17	12	1	1	0	0	45.6
7:00 AM	101	0	0	0	0	0	9	29	46	16	1	0	0	0	46.3
8:00 AM	165	0	0	0	2	2	35	62	45	16	2	1	0	0	43.7
9:00 AM	169	1	0	0	1	3	17	63	60	20	3	0	0	1	44.8
10:00 AM	253	3	1	0	2	7	50	96	80	12	1	1	0	0	42.7
11:00 AM	194	0	1	1	0	6	25	81	71	6	1	2	0	0	43.8
12:00 PM	216	1	0	0	0	5	38	93	61	15	3	0	0	0	43.4
1:00 PM	172	0	0	0	0	0	17	71	69	13	2	0	0	0	44.9
2:00 PM	180	2	0	0	0	5	31	69	50	20	3	0	0	0	43.7
3:00 PM	167	1	0	0	0	3	19	64	63	15	1	1	0	0	44.3
4:00 PM	187	2	0	1	0	0	15	75	71	20	3	0	0	0	44.6
5:00 PM	162	2	0	0	1	4	22	54	56	20	3	0	0	0	44.5
6:00 PM	162	1	0	0	1	2	25	55	59	14	4	1	0	0	44.5
7:00 PM	123	0	0	0	0	2	22	46	42	9	1	0	0	1	44.4
8:00 PM	151	0	0	0	0	2	23	63	44	16	2	1	0	0	44.5
9:00 PM	138	1	0	0	0	6	22	69	33	6	1	0	0	0	42.6
10:00 PM	70	0	0	0	0	1	18	30	19	1	1	0	0	0	42.8
11:00 PM	40	0	0	0	0	2	9	9	15	5	0	0	0	0	44.0
Total	2816	14	2	2	9	52	423	1085	933	250	36	8	0	2	44.1
%		0.5	0.1	0.1	0.3	1.8	15.0	38.5	33.1	8.9	1.3	0.3	0.0	0.1	

Percentile Speeds	10 %	15 %	50 %	85 %	90 %
(mph)	38.1	39.4	44.3	48.8	50.1

10 mph Pace Speed 39.4 - 49.4
Number in Pace 2052 (72.9 %)

Average 44.1 mph
Minimum 5.1 mph
Maximum 76.9 mph

Speeds Exceeded	45 mph	55 mph	65 mph
	43.6 %	1.6 %	0.1 %
Count	1229	46	2

PEAK HOUR TURNING MOVEMENT COUNTS

9/29/2012 SATURDAY
10:30:00 AM
RAVENSDALE, WASHINGTON
272ND AVE SE
SE KENT-KANGLEY RD
LOC# 01M WPA12128M

	From North				From East				From South				From West			
Start Time	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks
10:30 AM	0	1	0	0	0	37	2	0	5	0	24	0	27	27	1	0
10:40 AM	2	1	0	0	0	37	3	1	3	1	9	0	14	35	0	0
10:50 AM	1	0	1	0	0	27	4	0	3	0	4	0	10	30	0	0
11:00 AM	0	0	0	0	0	36	2	0	7	0	12	0	14	32	1	0
11:10 AM	0	0	1	0	0	41	8	1	5	0	22	0	14	36	1	2
11:20 AM	0	0	0	0	2	40	2	0	4	0	10	0	14	28	0	0
11:30 AM	0	0	0	0	0	35	5	1	2	1	13	0	14	27	0	0
11:40 AM	0	0	0	0	0	34	8	0	6	0	8	0	15	26	1	1
11:50 AM	0	1	1	0	1	30	10	0	20	1	6	0	20	29	1	0
12:00 PM	0	0	0	0	1	30	6	0	7	1	30	0	8	26	1	0
12:10 PM	0	0	1	0	0	31	3	1	3	0	9	0	9	43	1	2
12:20 PM	1	1	0	0	1	55	5	2	1	0	10	0	19	41	0	0
12:30 PM	0	0	0	0	0	27	9	0	2	0	18	0	15	38	1	0
12:40 PM	0	0	0	0	1	34	5	1	5	0	11	0	17	24	2	0
12:50 PM	0	0	1	0	0	32	5	0	6	0	7	0	8	31	1	1
1:00 PM	0	0	0	0	0	29	8	1	4	0	30	0	10	30	1	0
1:10 PM	1	1	0	0	0	33	3	0	4	0	22	0	12	44	1	1
1:20 PM	1	0	1	0	0	34	2	0	5	1	7	0	19	32	0	0
TOTALS	6	5	6	0	6	622	90	8	92	5	252	0	259	579	13	7
	35%	29%	35%		1%	87%	13%		26.4%	1.4%	72.2%		30%	68%	2%	

10/3/2012 WEDNESDAY
4:30:00 PM
RAVENSDALE, WASHINGTON
272ND AVE SE
SE KENT-KANGLEY RD
LOC# 01P WPA12128M

	From North				From East				From South				From West			
Start Time	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks
04:30 PM	0	1	0	0	0	14	1	3	2	0	1	0	1	15	1	0
04:35 PM	0	0	0	0	0	11	2	0	2	0	4	2	3	20	2	0
04:40 PM	1	0	0	0	0	13	2	1	2	0	1	0	3	13	0	0
04:45 PM	0	0	0	0	1	15	3	1	2	0	0	0	7	21	1	0
04:50 PM	1	0	0	0	1	16	5	0	0	1	5	0	5	23	1	0
04:55 PM	0	0	0	0	0	11	4	0	2	0	1	0	10	23	2	0
05:00 PM	0	0	2	0	1	17	4	1	5	0	9	0	10	15	1	0
05:05 PM	1	0	0	0	0	13	0	0	4	0	3	0	4	15	2	0
05:10 PM	0	0	0	0	0	18	1	0	1	0	3	0	6	29	0	0
05:15 PM	0	0	0	0	0	12	2	1	0	0	1	0	7	17	0	0
05:20 PM	0	0	0	0	0	5	2	0	6	1	4	0	15	29	0	0
05:25 PM	0	0	0	0	0	5	2	0	1	0	6	0	9	18	0	0
05:30 PM	0	0	0	0	0	15	1	0	1	1	4	1	12	17	2	0
05:35 PM	0	0	0	0	0	9	3	1	2	0	2	0	5	20	0	0
05:40 PM	0	0	0	0	0	16	5	0	3	0	3	0	6	21	0	0
05:45 PM	0	0	0	0	0	10	2	0	2	0	2	0	6	22	0	0
05:50 PM	0	0	0	0	0	15	1	1	4	0	4	0	7	15	0	0
05:55 PM	0	0	0	0	0	2	2	0	5	0	3	1	16	16	0	0
06:00 PM	0	0	0	0	0	6	1	0	2	0	1	0	13	12	0	0
06:05 PM	0	0	0	0	0	11	2	0	1	1	13	0	8	20	1	0
06:10 PM	0	0	0	0	0	11	4	1	0	0	5	0	5	9	0	0
06:15 PM	0	0	0	0	0	15	1	0	2	0	2	0	12	19	1	0
06:20 PM	2	0	0	0	0	4	1	0	1	0	3	0	6	17	0	0
06:25 PM	1	0	0	0	0	19	4	1	1	0	3	0	10	13	0	0
TOTALS	**6**	**1**	**2**	**0**	**3**	**283**	**55**	**11**	**51**	**4**	**83**	**4**	**186**	**439**	**14**	**0**
	67%	11%	22%		1%	83%	16%		37%	3%	60%		29%	69%	2%	

9/29/2012 SATURDAY
10:30:00 AM
RAVENSDALE, WASHINGTON
268TH AVE SE
SE KENT-KANGLEY RD
LOC# 02M WPA12128M

	From North				From East				From South				From West			
Start Time	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks
10:30 AM	0	0	0	0	1	53	0	0	0	0	4	0	5	55	0	0
10:40 AM	3	0	2	0	3	54	1	1	2	0	6	0	7	45	0	0
10:50 AM	0	0	0	0	0	33	0	0	0	1	4	0	9	40	0	0
11:00 AM	1	1	0	0	0	47	0	0	1	0	6	0	7	44	0	0
11:10 AM	0	0	0	0	0	66	1	1	1	0	5	0	8	52	0	2
11:20 AM	0	0	0	0	0	57	0	0	1	0	6	0	6	41	0	0
11:30 AM	0	0	1	0	0	43	0	1	0	0	7	0	7	38	0	0
11:40 AM	0	0	0	0	1	47	0	0	1	0	4	0	2	41	1	1
11:50 AM	0	0	0	0	0	33	1	0	0	2	4	1	6	50	0	0
TOTALS	**4**	**1**	**3**	**0**	**5**	**433**	**3**	**3**	**6**	**3**	**46**	**1**	**57**	**406**	**1**	**3**
	50%	13%	38%		1%	98%	1%		11%	5%	84%		12%	88%	0%	

PEAK HOUR TURNING MOVEMENT COUNTS

10/3/2012 WEDNESDAY
4:30:00 PM
RAVENSDALE, WASHINGTON
268TH AVE SE
SE KENT-KANGLEY RD
LOC# 02P WPA12128M

	From North				From East				From South				From West			
Start Time	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks
04:30 PM	0	0	0	0	0	19	0	1	0	0	3	0	4	30	0	1
04:35 PM	0	0	0	0	0	15	0	0	0	0	1	0	3	16	0	1
04:40 PM	0	0	0	0	0	14	0	1	1	0	5	0	5	23	0	3
04:45 PM	0	0	0	0	0	24	0	0	0	0	4	0	1	34	0	0
04:50 PM	0	0	0	0	0	15	2	0	1	0	2	0	1	35	0	0
04:55 PM	0	0	0	0	0	13	1	0	1	0	4	0	2	27	0	0
05:00 PM	0	0	0	0	0	26	1	0	0	0	1	0	4	22	0	0
05:05 PM	0	0	0	0	0	21	1	0	2	0	1	0	1	24	0	0
05:10 PM	0	0	0	0	0	12	1	1	1	0	2	0	2	30	0	0
05:15 PM	0	0	0	0	0	10	0	0	1	0	2	0	3	44	0	1
05:20 PM	0	0	0	0	0	13	0	0	0	0	0	0	2	27	0	3
05:25 PM	1	0	0	0	0	16	1	0	0	1	2	0	1	27	0	0
TOTALS	**1**	**0**	**0**	**0**	**0**	**198**	**7**	**3**	**7**	**1**	**27**	**0**	**29**	**339**	**0**	**9**
	100%	0%	0%		0%	97%	3%		20%	3%	77%		8%	92%	0%	

9/29/2012 SATURDAY
12:10:00 PM
RAVENSDALE, WASHINGTON
272ND AVE SE
SE RAVENSDALE WAY
LOC# 03M WPA12128M

	From North				From East				From West			
Start Time	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks
12:10 PM	6	0	1	0	3	15	0	0	0	12	3	0
12:20 PM	5	0	1	0	1	11	0	0	0	7	2	0
12:30 PM	7	0	2	0	0	7	0	0	0	9	1	0
12:40 PM	1	0	0	0	0	9	0	0	0	6	1	0
12:50 PM	3	0	0	0	1	14	0	0	0	5	3	0
1:00 PM	5	0	6	0	4	8	0	0	0	7	3	0
1:10 PM	1	0	3	0	0	17	0	0	0	6	5	0
1:20 PM	4	0	3	0	1	8	0	0	0	2	1	0
TOTALS	**32**	**0**	**16**	**0**	**10**	**89**	**0**	**0**	**0**	**54**	**19**	**0**
	67%	0%	33%		10%	90%	0%		0%	74%	26%	

10/3/2012 WEDNESDAY
5:35:00 PM
RAVENSDALE, WASHINGTON
272ND AVE SE
SE RAVENSDALE WAY
LOC# 03P WPA12128M

	From North				From East				From West			
Start Time	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks	Right	Thru	Left	Trucks
05:35 PM	0	0	0	0	0	13	0	0	0	1	3	1
05:40 PM	1	0	0	0	1	15	0	0	0	9	1	0
05:45 PM	3	0	0	0	0	13	0	0	0	2	2	0
05:50 PM	4	0	0	0	0	16	0	0	0	5	2	1
05:55 PM	6	0	0	0	0	20	0	1	0	5	0	0
06:00 PM	2	0	0	0	0	13	0	1	0	4	0	1
06:05 PM	1	0	0	0	0	13	0	1	0	5	0	0
06:10 PM	4	0	0	0	0	12	0	0	0	4	0	0
06:15 PM	1	0	0	0	0	13	0	1	0	1	3	0
06:20 PM	0	0	0	0	0	8	0	0	0	4	2	0
06:25 PM	2	0	0	0	0	10	0	1	0	5	1	0
TOTALS	**24**	**0**	**0**	**0**	**1**	**146**	**0**	**5**	**0**	**45**	**14**	**3**
	100%	0%	0%		1%	99%	0%		0%	76%	24%	

		FALL SOCCER WEEKDAY PRACTICE	FALL SOCCER WEEKDAY PRACTICE	FALL SOCCER WEEKDAY PRACTICE	FALL SOCCER WEEKDAY PRACTICE		FALL BASEBALL WI
		Boys & Girls U9 & U10	Boys & Girls U9 & U10	Boys & Girls U9 & U10	Boys & Girls U11 - U18		Boys & Girls U11 - U18
		Ravensdale 1	Ravensdale 2	Ravensdale 3	Ravensdale Turf (existing soccer field)		Ravensdale Turf (ex
		grass fields no lights	grass fields no lights	grass fields no lights	per Fall 2012 schedule		
		10 participants / team	10 participants / team	10 participants / team	15 participants / team		13 participants / team
		parents/players	parents/players	parents/players	parents/players		parents/players
		plus coaches (parent)	plus coaches (parent)	plus coaches (parent)	plus coaches	Parent	plus coaches
		# of Vehicles	# of Vehicles	# of Vehicles	# of Vehicles	Dropoff & Return	# of Vehicles
Time	Time	In Out	In Out	In Out	In Out	In Out	In Out
Begin	End	Practice	Practice	Practice	Practice		Game
		assume 10% carpool. 10 players plus parent or coach per vehicle. Assume 40% parents drop off and return, others stay.	assume 10% carpool. 10 players plus parent or coach per vehicle. Assume 40% parents drop off and return, others stay.	assume 10% carpool. 10 players plus parent or coach per vehicle. Assume 40% parents drop off and return, others stay.	Mon,Tue,Wed busiest days. 1st two sessions; 3 teams per field, 1.5 hour practice. Assume 50% carpool. 45*50%=23. 40% of those parents drop off and return. Others stay. 3rd session, 2 teams, older group. 50% of players drive, 25% carpool: 30*50%=15; 15*(1-25%)=11. 50% parent drive, 25% carpool, 40% drop off and return: 15*(1-25%)=11; 11*40%=4.		assume no PRACTICE played during peak times for soccer us 3 fields baseball Rock Creek practice o 11-12 starting at 5:30. 15 players, 5 coaches, 4 parent
3:00 PM	3:10 PM						
3:10 PM	3:20 PM						
3:20 PM	3:30 PM						
3:30 PM	3:40 PM						
3:40 PM	3:50 PM						
3:50 PM	4:00 PM						
4:00 PM	4:10 PM						
4:10 PM	4:20 PM						
4:20 PM	4:30 PM						
4:30 PM	4:40 PM						
4:40 PM	4:50 PM	3	3	3	5		
4:50 PM	5:00 PM	6	6	6	18		
5:00 PM	5:10 PM	3	3	3	6		
5:10 PM	5:20 PM	1 PRACTICE 1	1 PRACTICE 1	1 PRACTICE 1	3 PRACTICE 1		3
5:20 PM	5:30 PM						7
5:30 PM	5:40 PM						
5:40 PM	5:50 PM	3	3	3			PRACTICE 1
5:50 PM	6:00 PM	1	1	1			
6:00 PM	6:10 PM	7	7	7			
6:10 PM	6:20 PM	2	2	2	5 6		
6:20 PM	6:30 PM				18 3		
6:30 PM	6:40 PM				20 6		
6:40 PM	6:50 PM				3 3		
6:50 PM	7:00 PM				PRACTICE 2		7
7:00 PM	7:10 PM						3
7:10 PM	7:20 PM						
7:20 PM	7:30 PM						
7:30 PM	7:40 PM						
7:40 PM	7:50 PM				4 6		
7:50 PM	8:00 PM				18 3		
8:00 PM	8:10 PM				20 2		
8:10 PM	8:20 PM				3 2		
8:20 PM	8:30 PM				PRACTICE 3		
8:30 PM	8:40 PM						
8:40 PM	8:50 PM						
8:50 PM	9:00 PM						
9:00 PM	9:10 PM						
9:10 PM	9:20 PM				2		
9:20 PM	9:30 PM				2		
9:30 PM	9:40 PM				18		
9:40 PM	9:50 PM				4		
9:50 PM	10:00 PM						
10:00 PM	10:10 PM						
10:10 PM	10:20 PM						

EEKDAY PRACTICE
(unsure of schedule)
isting baseball field)

E played on this field
soccer use on the other

practice observed 10-
.
, 4 parents. BU14?

3
2

2
3

FALL SOCCER WEEKDAY PRACTICE
Boys & Girls U11 - U18 NEW FIELD
Ravensdale Turf (new North Field)

estimated schedule

Parent Dropoff & Return		15 participants / team parents/players plus coaches # of Vehicles		Parent Dropoff & Return	
In	Out	In	Out	In	Out
Game		Practice			

Mon,Tue,Wed busiest days.
1st two sessions; 3 teams per field, 1.5 hour practice. Assume 50% carpool. 45*50%=23. 40% of those parents drop off and return. Others stay
3rd session, 2 teams, older group. 50% of players drive, 25% carpool: 30*50%=15; 15*(1-25%)=11. 50% parent drive, 25% carpool, 40% drop off and return: 15*(1-25%)=11; 11*40%=4.

5
18

6
3

PRACTICE 1

5
18

6
3

20
3

6
3

PRACTICE 2

4
18

6
3

20
3

2
2

PRACTICE 3

2
2

18
4

FALL SOCCER WEEKDAY PRACTICE
Boys & Girls U11 - U18 NEW FIELD
Ravensdale Turf (new South Field)

15 participants / team parents/players plus coaches # of Vehicles		Other Spectators friends, family # of Vehicles	
In	Out	In	Out
Game		Game	

Mon,Tue,Wed busiest days.
1st two sessions; 3 teams per field, 1.5 hour practice. Assume 50% carpool. 45*50%=23. 40% of those parents drop off and return. Others stay
3rd session, 2 teams, older group. 50% of players drive, 25% carpool: 30*50%=15; 15*(1-25%)=11. 50% parent drive, 25% carpool, 40% drop off and return: 15*(1-25%)=11; 11*40%=4.

5
18

6
3

PRACTICE 1

5
18

6
3

20
3

6
3

PRACTICE 2

4
18

6
3

20
3

2
2

PRACTICE 3

2
2

18
4

			FALL SOCCER WEEKDAY PRACTICE					FALL SOC
			Ravensdale 1, 2 & 3					
Time	Time		10-min summaries		Hourly Summaries			10-min su
Begin	End		In	Out	In	Out	Bothways	In
3:00 PM	3:10 PM	4:00 PM	0	0	0	0	0	0
3:10 PM	3:20 PM	4:10 PM	0	0	0	0	0	0
3:20 PM	3:30 PM	4:20 PM	0	0	0	0	0	0
3:30 PM	3:40 PM	4:30 PM	0	0	0	0	0	0
3:40 PM	3:50 PM	4:40 PM	0	0	0	0	0	0
3:50 PM	4:00 PM	4:50 PM	0	0	9	0	9	0
4:00 PM	4:10 PM	5:00 PM	0	0	27	0	27	0
4:10 PM	4:20 PM	5:10 PM	0	0	27	9	36	0
4:20 PM	4:30 PM	5:20 PM	0	0	27	12	39	0
4:30 PM	4:40 PM	5:30 PM	0	0	27	12	39	0
4:40 PM	4:50 PM	5:40 PM	9	0	27	12	39	5
4:50 PM	5:00 PM	5:50 PM	18	0	27	12	39	18
5:00 PM	5:10 PM	6:00 PM	0	9	12	12	24	0
5:10 PM	5:20 PM	6:10 PM	0	3	12	24	36	0
5:20 PM	5:30 PM	6:20 PM	0	0	12	27	39	0
5:30 PM	5:40 PM	6:30 PM	0	0	12	27	39	0
5:40 PM	5:50 PM	6:40 PM	9	0	12	27	39	0
5:50 PM	6:00 PM	6:50 PM	3	0	3	27	30	0
6:00 PM	6:10 PM	7:00 PM	0	21	0	27	27	0
6:10 PM	6:20 PM	7:10 PM	0	6	0	6	6	11
6:20 PM	6:30 PM	7:20 PM	0	0	0	0	0	21
6:30 PM	6:40 PM	7:30 PM	0	0	0	0	0	0
6:40 PM	6:50 PM	7:40 PM	0	0	0	0	0	0
6:50 PM	7:00 PM	7:50 PM	0	0	0	0	0	0
7:00 PM	7:10 PM	8:00 PM	0	0	0	0	0	0
7:10 PM	7:20 PM	8:10 PM	0	0	0	0	0	0
7:20 PM	7:30 PM	8:20 PM	0	0	0	0	0	0
7:30 PM	7:40 PM	8:30 PM	0	0	0	0	0	0
7:40 PM	7:50 PM	8:40 PM	0	0	0	0	0	10
7:50 PM	8:00 PM	8:50 PM	0	0	0	0	0	21
8:00 PM	8:10 PM	9:00 PM	0	0	0	0	0	0
8:10 PM	8:20 PM	9:10 PM	0	0	0	0	0	0
8:20 PM	8:30 PM	9:20 PM	0	0	0	0	0	0
8:30 PM	8:40 PM	9:30 PM	0	0	0	0	0	0
8:40 PM	8:50 PM	9:40 PM	0	0	0	0	0	0
8:50 PM	9:00 PM	9:50 PM	0	0	0	0	0	0
9:00 PM	9:10 PM	10:00 PM	0	0	0	0	0	0
9:10 PM	9:20 PM	10:10 PM	0	0	0	0	0	2
9:20 PM	9:30 PM	10:20 PM	0	0	0	0	0	2
9:30 PM	9:40 PM	10:30 PM	0	0	0	0	0	0
9:40 PM	9:50 PM	10:40 PM	0	0	0	0	0	0
9:50 PM	10:00 PM	10:50 PM	0	0	0	0	0	0
10:00 PM	10:10 PM	11:00 PM	0	0	0	0	0	0
10:10 PM	10:20 PM	11:10 PM	0	0	0	0	0	0

CCER WEEKDAY PRACTICE				FALL BASEBALL/SOFTBALL WKDY PRACTIC					FALL SOCCER WEEKDAY PRACTICE					EXISTING FALL SOCCER ON TURF1 BASEBALL ON TURF2 WEEKDAY PRACTICES			3 SOCCER FIELD USE, 1 BASEBALL FIE EXISTING FIELD TURF #1 & #2 AND NEW FIELD TURF 3&4 WEEKDAY PRAC		
Ravensdale Existing Turf 1				Ravensdale Existing Turf 2					Ravensdale New Turf 3&4					Ravensdale 1,2,3, and Extg Turf 1 only			Ravensdale Extg & New Turf		
ummaries	Hourly Summaries			10-min summaries		Hourly Summaries			10-min summaries		Hourly Summaries			Hourly Summaries			Hourly Summaries		
Out	In	Out	Bothways	In	Out	In	Out	Bothways	In	Out	In	Out	Bothways	In	Out	Bothways	In	Out	Bothways
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	5	0	5	0	0	0	0	0	0	0	10	0	10	14	0	14	15	0	15
0	23	0	23	0	0	0	0	0	0	0	46	0	46	50	0	50	69	0	69
0	23	6	29	0	0	0	0	0	0	0	46	12	58	50	15	65	69	18	87
0	23	9	32	0	0	3	0	3	0	0	46	18	64	53	21	74	72	27	99
0	23	9	32	0	0	10	0	10	0	0	46	18	64	60	21	81	79	27	106
0	23	9	32	0	0	10	3	13	10	0	46	18	64	60	24	**84**	79	30	109
0	18	9	27	0	0	10	5	15	36	0	36	18	54	55	26	81	64	32	96
6	0	9	9	0	0	10	5	15	0	12	0	18	18	22	26	48	10	32	42
3	0	3	3	3	0	10	5	15	0	6	0	6	6	22	32	54	10	14	24
0	11	0	11	7	0	7	5	12	0	0	22	0	22	30	32	62	40	5	45
0	32	0	32	0	3	0	5	5	0	0	64	0	64	44	32	76	96	5	101
0	32	26	58	0	2	0	2	2	0	0	64	52	116	44	55	99	96	80	176
0	32	32	**64**	0	0	2	0	2	0	0	64	64	**128**	37	59	96	98	96	**194**
0	32	32	**64**	0	0	5	0	5	0	0	64	64	**128**	37	59	96	101	96	**197**
0	32	32	**64**	0	0	5	7	12	22	0	64	64	**128**	37	45	82	101	103	**204**
0	21	32	53	0	0	5	10	15	42	0	42	64	106	26	42	68	68	106	174
26	0	32	32	0	0	5	10	15	0	52	0	64	64	5	42	47	5	106	111
6	0	6	6	2	0	5	10	15	0	12	0	12	12	5	16	21	5	28	33
0	10	0	10	3	0	3	10	13	0	0	20	0	20	13	10	23	33	10	43
0	31	0	31	0	7	0	10	10	0	0	62	0	62	31	10	41	93	10	103
0	31	22	53	0	3	0	3	3	0	0	62	44	106	31	25	56	93	69	162
0	31	27	58	0	0	0	0	0	0	0	62	54	116	31	27	58	93	81	174
0	31	27	58	0	0	0	0	0	0	0	62	54	116	31	27	58	93	81	174
0	31	27	58	0	0	0	0	0	20	0	62	54	116	31	27	58	93	81	174
0	21	27	48	0	0	0	0	0	42	0	42	54	96	21	27	48	63	81	144
22	0	27	27	0	0	0	0	0	0	44	0	54	54	0	27	27	0	81	81
5	0	5	5	0	0	0	0	0	0	10	0	10	10	0	5	5	0	15	15
0	2	0	2	0	0	0	0	0	0	0	4	0	4	2	0	2	6	0	6
0	4	0	4	0	0	0	0	0	0	0	8	0	8	4	0	4	12	0	12
0	4	18	22	0	0	0	0	0	0	0	8	36	44	4	18	22	12	54	66
0	4	22	26	0	0	0	0	0	0	0	8	44	52	4	22	26	12	66	78
0	4	22	26	0	0	0	0	0	0	0	8	44	52	4	22	26	12	66	78
0	4	22	26	0	0	0	0	0	4	0	8	44	52	4	22	26	12	66	78
0	2	22	24	0	0	0	0	0	4	0	4	44	48	2	22	24	6	66	72
18	0	22	22	0	0	0	0	0	0	36	0	44	44	0	22	22	0	66	66
4	0	4	4	0	0	0	0	0	0	8	0	8	8	0	4	4	0	12	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ELD USE

CTICES

Assume all at new parking lot for 3 turf field uses + baseball

Left In	Right In	Left Out	Right Out
25%	75%	65%	35%
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
4	11	0	0
17	52	0	0
17	52	12	6
18	54	18	9
20	59	18	9
20	59	20	11
16	48	21	11
3	8	21	11
3	8	9	5
10	30	3	2
24	72	3	2
24	72	52	28
25	**74**	**62**	**34**
25	**76**	**62**	**34**
25	**76**	**67**	**36**
17	51	69	37
1	4	69	37
1	4	18	10
8	25	7	4
23	70	7	4
23	70	45	24
23	70	53	28
23	70	53	28
23	70	53	28
16	47	53	28
0	0	53	28
0	0	10	5
2	5	0	0
3	9	0	0
3	9	35	19
3	9	43	23
3	9	43	23
3	9	43	23
2	5	43	23
0	0	43	23
0	0	8	4
0	0	0	0
0	0	0	0
0	0	0	0

FALL SOCCER SATURDAY GAMES

Boys & Girls U9 & U10 — per 9/29 Sat schedule

Ravensdale 1

Time Begin	Time End	10 participants / team parents/players plus coaches (parent) # of Vehicles In	Out	Referees 1 # of Vehicles In	Out	Other Spectators friends, family # of Vehicles In	Out
		Game		Game		Game	
8:00 AM	8:10 AM	assume 10% carpool. 20 players plus parent or coach per vehicle. 18 vehicles arrive/depart with 10% carpool. Assume up to 3 veh for other spectators					
8:10 AM	8:20 AM						
8:20 AM	8:30 AM						
8:30 AM	8:40 AM						
8:40 AM	8:50 AM						
8:50 AM	9:00 AM						
9:00 AM	9:10 AM	4					
9:10 AM	9:20 AM	10					
9:20 AM	9:30 AM	4		1		1	
9:30 AM	9:40 AM					2	
9:40 AM	9:50 AM			GAME 1			
9:50 AM	10:00 AM						
10:00 AM	10:10 AM						
10:10 AM	10:20 AM						
10:20 AM	10:30 AM						
10:30 AM	10:40 AM	4	10		1		2
10:40 AM	10:50 AM	10	6				1
10:50 AM	11:00 AM	4	2	1		1	
11:00 AM	11:10 AM					2	
11:10 AM	11:20 AM						
11:20 AM	11:30 AM			GAME 2			
11:30 AM	11:40 AM						
11:40 AM	11:50 AM						
11:50 AM	12:00 PM						
12:00 PM	12:10 PM	4	10		1		2
12:10 PM	12:20 PM	10	6				1
12:20 PM	12:30 PM	4	2	1		1	
12:30 PM	12:40 PM					2	
12:40 PM	12:50 PM						
12:50 PM	1:00 PM			GAME 3			
1:00 PM	1:10 PM						
1:10 PM	1:20 PM						
1:20 PM	1:30 PM						
1:30 PM	1:40 PM		10		1		2
1:40 PM	1:50 PM		6				1
1:50 PM	2:00 PM		2				
2:00 PM	2:10 PM						
2:10 PM	2:20 PM						
2:20 PM	2:30 PM						
2:30 PM	2:40 PM						
2:40 PM	2:50 PM						
2:50 PM	3:00 PM						
3:00 PM	3:10 PM						
3:10 PM	3:20 PM						
3:20 PM	3:30 PM						
3:30 PM	3:40 PM						
3:40 PM	3:50 PM						
3:50 PM	4:00 PM						
4:00 PM	4:10 PM						
4:10 PM	4:20 PM						
4:20 PM	4:30 PM						
4:30 PM	4:40 PM						
4:40 PM	4:50 PM						
4:50 PM	5:00 PM						
5:00 PM	5:10 PM						
5:10 PM	5:20 PM						
5:20 PM	5:30 PM						

FALL SOCCER SATURDAY GAMES

Boys & Girls U9 & U10 — per 9/29 Sat schedule

Ravensdale 2

Time Begin	Time End	10 participants / team parents/players plus coaches (parent) # of Vehicles In	Out	Referees 1 # of Vehicles In	Out	Other Spectators friends, family # of Vehicles In	Out
		Game		Game		Game	
8:00 AM	8:10 AM	assume 10% carpool. 20 players plus parent or coach per vehicle. 18 vehicles arrive/depart with 10% carpool. Assume up to 3 veh for other spectators					
8:10 AM	8:20 AM						
8:20 AM	8:30 AM						
8:30 AM	8:40 AM						
8:40 AM	8:50 AM						
8:50 AM	9:00 AM						
9:00 AM	9:10 AM						
9:10 AM	9:20 AM						
9:20 AM	9:30 AM						
9:30 AM	9:40 AM	4					
9:40 AM	9:50 AM	10					
9:50 AM	10:00 AM	4		1		1	
10:00 AM	10:10 AM					2	
10:10 AM	10:20 AM			GAME 1			
10:20 AM	10:30 AM						
10:30 AM	10:40 AM						
10:40 AM	10:50 AM						
11:00 AM	11:10 AM	4	10		1		2
11:10 AM	11:20 AM	10	6				1
11:20 AM	11:30 AM	4	2	1		1	
11:30 AM	11:40 AM					2	
11:40 AM	11:50 AM			GAME 2			
11:50 AM	12:00 PM						
12:00 PM	12:10 PM						
12:10 PM	12:20 PM						
12:20 PM	12:30 PM						
12:30 PM	12:40 PM	4	10		1		2
12:40 PM	12:50 PM	10	6				1
12:50 PM	1:00 PM	4	2	1		1	
1:00 PM	1:10 PM					2	
1:10 PM	1:20 PM			GAME 3			
1:20 PM	1:30 PM						
1:30 PM	1:40 PM						
1:40 PM	1:50 PM						
1:50 PM	2:00 PM						
2:00 PM	2:10 PM		10		1		2
2:10 PM	2:20 PM		6				1
2:20 PM	2:30 PM		2				
2:30 PM	2:40 PM						
2:40 PM	2:50 PM						
2:50 PM	3:00 PM						
3:00 PM	3:10 PM						
3:10 PM	3:20 PM						
3:20 PM	3:30 PM						
3:30 PM	3:40 PM						
3:40 PM	3:50 PM						
3:50 PM	4:00 PM						
4:00 PM	4:10 PM						
4:10 PM	4:20 PM						
4:20 PM	4:30 PM						
4:30 PM	4:40 PM						
4:40 PM	4:50 PM						
4:50 PM	5:00 PM						
5:00 PM	5:10 PM						
5:10 PM	5:20 PM						
5:20 PM	5:30 PM						

FALL SOCCER SATURDAY GAMES

Boys & Girls U9 & U10 — per 9/29 Sat schedule

Ravensdale 3

Time Begin	Time End	10 participants / team parents/players plus coaches (parent) # of Vehicles In	Out	Referees 1 # of Vehicles In	Out	Other Spectators friends, family # of Vehicles In	Out
		Game		Game		Game	
8:00 AM	8:10 AM	assume 10% carpool. 20 players plus parent or coach per vehicle. 18 vehicles arrive/depart with 10% carpool. Assume up to 3 veh for other spectators					
8:10 AM	8:20 AM						
8:20 AM	8:30 AM						
8:30 AM	8:40 AM						
8:40 AM	8:50 AM						
8:50 AM	9:00 AM						
9:00 AM	9:10 AM	4					
9:10 AM	9:20 AM	10					
9:20 AM	9:30 AM	4		1		1	
9:30 AM	9:40 AM					2	
9:40 AM	9:50 AM			GAME 1			
9:50 AM	10:00 AM						
10:00 AM	10:10 AM	4	10		1		2
10:10 AM	10:20 AM	10	6				1
10:20 AM	10:30 AM	4	2	1		1	
10:30 AM	10:40 AM					2	
10:40 AM	10:50 AM			GAME 2			
10:50 AM	11:00 AM						
11:00 AM	11:10 AM						
11:10 AM	11:20 AM						
11:20 AM	11:30 AM	4	10		1		2
11:30 AM	11:40 AM	10	6				1
11:40 AM	11:50 AM	4	2	1		1	
11:50 AM	12:00 PM					2	
12:00 PM	12:10 PM			GAME 3			
12:10 PM	12:20 PM						
12:20 PM	12:30 PM						
12:30 PM	12:40 PM						
12:40 PM	12:50 PM						
12:50 PM	1:00 PM	4	10		1		2
1:00 PM	1:10 PM	10	6				1
1:10 PM	1:20 PM	4	2	1		1	
1:20 PM	1:30 PM					2	
1:30 PM	1:40 PM			GAME 4			
1:40 PM	1:50 PM						
1:50 PM	2:00 PM						
2:00 PM	2:10 PM						
2:10 PM	2:20 PM						
2:20 PM	2:30 PM						
2:30 PM	2:40 PM		10		1		2
2:40 PM	2:50 PM		6				1
2:50 PM	3:00 PM		2				
3:00 PM	3:10 PM						
3:10 PM	3:20 PM						
3:20 PM	3:30 PM						
3:30 PM	3:40 PM						
3:40 PM	3:50 PM						
3:50 PM	4:00 PM						
4:00 PM	4:10 PM						
4:10 PM	4:20 PM						
4:20 PM	4:30 PM						
4:30 PM	4:40 PM						
4:40 PM	4:50 PM						
4:50 PM	5:00 PM						
5:00 PM	5:10 PM						
5:10 PM	5:20 PM						
5:20 PM	5:30 PM						

FALL SOCCER SATURDAY GAMES

Boys & Girls U11 - U18 — per 9/29 Sa

Ravensdale Turf (existing soccer field)

Time Begin	Time End	15 participants / team parents/players plus coaches # of Vehicles In	Out	Referees 3 # of Vehicles In	Out	Other Sp friends, # of Ve In
		Game		Game		Ga
8:00 AM	8:10 AM	1. 30 players (15% carpool) = 26 vehicles for parents & playe coaches per team, assume 1 coach is a parent. Thus, 28 ve (26+2) 2. Refs do 2 games If back to back 3. Up to 3 veh per team non player spectators (1 to 4 per ca				
8:10 AM	8:20 AM					
8:20 AM	8:30 AM					
8:30 AM	8:40 AM					
8:40 AM	8:50 AM					
8:50 AM	9:00 AM					
9:00 AM	9:10 AM	2				
9:10 AM	9:20 AM	16				
9:20 AM	9:30 AM	9				
9:30 AM	9:40 AM	1		1		
9:40 AM	9:50 AM			2		2
9:50 AM	10:00 AM					1
10:00 AM	10:10 AM					
10:10 AM	10:20 AM			GAME 1		
10:20 AM	10:30 AM					
10:30 AM	10:40 AM	16				
10:40 AM	10:50 AM	10				
10:50 AM	11:00 AM	2				
11:00 AM	11:10 AM			12		2
11:10 AM	11:20 AM			16		1
11:20 AM	11:30 AM					
11:30 AM	11:40 AM			GAME 2		
11:40 AM	11:50 AM					
11:50 AM	12:00 PM					
12:00 PM	12:10 PM	2				
12:10 PM	12:20 PM	16		12		2
12:20 PM	12:30 PM	9		16		1
12:30 PM	12:40 PM	1		1		
12:40 PM	12:50 PM			2		2
12:50 PM	1:00 PM					1
1:00 PM	1:10 PM					
1:10 PM	1:20 PM			GAME 3		
1:20 PM	1:30 PM					
1:30 PM	1:40 PM	2				
1:40 PM	1:50 PM	16		12		2
1:50 PM	2:00 PM	9		16		1
2:00 PM	2:10 PM	1		1		
2:10 PM	2:20 PM			2		2
2:20 PM	2:30 PM					1
2:30 PM	2:40 PM					
2:40 PM	2:50 PM			GAME 4		
2:50 PM	3:00 PM					
3:00 PM	3:10 PM					
3:10 PM	3:20 PM					
3:20 PM	3:30 PM	2				
3:30 PM	3:40 PM	16		12		2
3:40 PM	3:50 PM	9		16		1
3:50 PM	4:00 PM	1		1		
4:00 PM	4:10 PM			2		2
4:10 PM	4:20 PM					1
4:20 PM	4:30 PM					
4:30 PM	4:40 PM			GAME 4		
4:40 PM	4:50 PM					
4:50 PM	5:00 PM					
5:00 PM	5:10 PM					
5:10 PM	5:20 PM					
5:20 PM	5:30 PM					

FALL BASEBALL SATURDAY GAME

FALL SOCCER SATURDAY GAMES

FALL SOCCER SATURDAY GAMES

at schedule | Boys & Girls U11 - U18 (unsure of schedule) | Boys & Girls U11 - U18 NEW FIELD | Boys & Girls U11 - U18 NEW FIELD

Ravensdale Turf (existing baseball field) | Ravensdale Turf (new North Field) | Ravensdale Turf (new South Field)

pectators, family

ehicles Out

me

assume no game being played on this field during peak times for soccer use on the other 3 fields

15 participants / team parents/players plus coaches

Referees 3

Other Spectators friends, family

# of Vehicles In Out

Game

ayers. 2 veh total

car)

1. 30 players (15% carpool) = 26 vehicles for parents & players. 2 coaches per team, assume 1 coach is a parent. Thus, 28 veh total (26+2)
2. Refs do 2 games If back to back
3. Up to 3 veh per team non player spectators

NO BASEBALL GAME DURING PEAK SAT FALL SOCCER; BASEBALL LIKELY TO BE SCHEDULED ON SUNDAYS

NO BASEBALL GAME DURING PEAK SAT FALL SOCCER; BASEBALL LIKELY TO BE SCHEDULED ON SUNDAYS

NO BASEBALL GAME DURING PEAK SAT FALL SOCCER; BASEBALL LIKELY TO BE SCHEDULED ON SUNDAYS

GAME 1

GAME 2

GAME 3

GAME 4

Time Begin	Time End
8:00 AM	8:10 AM
8:10 AM	8:20 AM
8:20 AM	8:30 AM
8:30 AM	8:40 AM
8:40 AM	8:50 AM
8:50 AM	9:00 AM
9:00 AM	9:10 AM
9:10 AM	9:20 AM
9:20 AM	9:30 AM
9:30 AM	9:40 AM
9:40 AM	9:50 AM
9:50 AM	10:00 AM
10:00 AM	10:10 AM
10:10 AM	10:20 AM
10:20 AM	10:30 AM
10:30 AM	10:40 AM
10:40 AM	10:50 AM
10:50 AM	11:00 AM
11:00 AM	11:10 AM
11:10 AM	11:20 AM
11:20 AM	11:30 AM
11:30 AM	11:40 AM
11:40 AM	11:50 AM
11:50 AM	12:00 PM
12:00 PM	12:10 PM
12:10 PM	12:20 PM
12:20 PM	12:30 PM
12:30 PM	12:40 PM
12:40 PM	12:50 PM
12:50 PM	1:00 PM
1:00 PM	1:10 PM
1:10 PM	1:20 PM
1:20 PM	1:30 PM
1:30 PM	1:40 PM
1:40 PM	1:50 PM
1:50 PM	2:00 PM
2:00 PM	2:10 PM
2:10 PM	2:20 PM
2:20 PM	2:30 PM
2:30 PM	2:40 PM
2:40 PM	2:50 PM
2:50 PM	3:00 PM
3:00 PM	3:10 PM
3:10 PM	3:20 PM
3:20 PM	3:30 PM
3:30 PM	3:40 PM
3:40 PM	3:50 PM
3:50 PM	4:00 PM
4:00 PM	4:10 PM
4:10 PM	4:20 PM
4:20 PM	4:30 PM
4:30 PM	4:40 PM
4:40 PM	4:50 PM
4:50 PM	5:00 PM
5:00 PM	5:10 PM
5:10 PM	5:20 PM
5:20 PM	5:30 PM

FALL SOCCER SATURDAY GAMES					FALL SOCCER SATURDAY GAMES					FALL BASEBALL/SOFTBALL GAMES					FALL SATURDAY SOCCER GAMES				
Ravensdale 1, 2 & 3					Ravensdale Existing Turf 1					Ravensdale Existing Turf 2					Ravensdale New Turf 3&4				
10-min summaries		Hourly Summaries			10-min summaries		Hourly Summaries			10-min summaries		Hourly Summaries			10-min summaries		Hourly Summaries		
In	Out	In	Out	Bothways	In	Out	In	Out	Bothways	In	Out	In	Out	Bothways	In	Out	In	Out	Bothways
0	0	20	0	20	0	0	0	0	0	0	0	0	0	0	0	0	49	0	49
0	0	26	0	26	0	0	0	0	0	0	0	0	0	0	0	0	60	0	60
0	0	36	0	36	0	0	2	0	2	0	0	0	0	0	2	0	63	0	63
4	0	42	0	42	0	0	18	0	18	0	0	0	0	0	18	0	65	0	65
10	0	44	0	44	0	0	27	0	27	0	0	0	0	0	9	0	48	0	48
6	0	44	0	44	0	0	29	0	29	0	0	0	0	0	20	0	39	0	39
6	0	44	0	44	0	0	33	0	33	0	0	0	0	0	11	0	19	0	19
10	0	44	13	57	2	0	34	0	34	0	0	0	0	0	3	0	8	0	8
6	0	44	20	64	16	0	32	0	32	0	0	0	0	0	4	0	5	0	5
6	0	44	22	66	9	0	16	0	16	0	0	0	0	0	1	0	17	0	17
10	0	44	35	79	2	0	7	0	7	0	0	0	0	0	0	0	27	16	43
6	0	44	42	86	4	0	5	0	5	0	0	0	0	0	0	0	28	34	62
6	13	44	44	88	1	0	17	0	17	0	0	0	0	0	0	0	46	34	80
10	7	44	44	88	0	0	26	0	26	0	0	0	0	0	0	0	57	50	107
6	2	44	44	88	0	0	28	0	28	0	0	0	0	0	16	0	60	68	128
6	13	44	44	88	0	0	30	14	44	0	0	0	0	0	11	16	48	68	116
10	7	44	44	88	0	0	31	31	62	0	0	0	0	0	1	18	38	52	90
6	2	44	44	88	16	0	31	31	62	0	0	0	0	0	18	0	37	34	71
6	13	44	44	88	10	0	15	31	46	0	0	0	0	0	11	16	19	34	53
10	7	44	44	88	2	0	5	31	36	0	0	0	0	0	3	18	8	18	26
6	2	44	44	88	2	14	3	31	34	0	0	0	0	0	4	0	5	0	5
6	13	44	44	88	1	17	1	17	18	0	0	0	0	0	1	0	17	0	17
10	7	44	44	88	0	0	0	0	0	0	0	0	0	0	0	0	27	16	43
6	2	44	44	88	0	0	2	0	2	0	0	0	0	0	0	0	29	34	63
6	13	44	44	88	0	0	18	16	34	0	0	0	0	0	0	0	49	34	83
10	7	44	44	88	0	0	27	34	61	0	0	0	0	0	0	0	60	50	110
6	2	44	44	88	0	0	29	34	63	0	0	0	0	0	16	0	63	68	131
6	13	44	44	88	0	0	33	34	67	0	0	0	0	0	11	16	51	68	119
10	7	40	44	84	2	0	34	34	68	0	0	0	0	0	2	18	41	52	93
6	2	30	44	74	16	16	32	34	66	0	0	0	0	0	20	0	39	34	73
6	13	24	44	68	9	18	16	18	34	0	0	0	0	0	11	16	19	34	53
10	7	18	44	62	2	0	7	0	7	0	0	0	0	0	3	18	8	18	26
6	2	8	44	52	4	0	5	0	5	0	0	0	0	0	4	0	5	0	5
2	13	2	44	46	1	0	1	0	1	0	0	0	0	0	1	0	17	0	17
0	7	0	44	44	0	0	0	0	0	0	0	0	0	0	0	0	27	16	43
0	2	0	44	44	0	0	2	0	2	0	0	0	0	0	0	0	29	34	63
0	13	0	44	44	0	0	18	16	34	0	0	0	0	0	0	0	51	34	85
0	7	0	31	31	0	0	27	34	61	0	0	0	0	0	0	0	63	50	113
0	2	0	24	24	0	0	29	34	63	0	0	0	0	0	16	0	65	68	133
0	13	0	22	22	0	0	33	34	67	0	0	0	0	0	11	16	53	68	121
0	7	0	9	9	2	0	34	34	68	0	0	0	0	0	2	18	43	52	95
0	2	0	2	2	16	16	32	34	66	0	0	0	0	0	22	0	41	34	75
0	0	0	0	0	9	18	16	18	34	0	0	0	0	0	12	16	19	34	53
0	0	0	0	0	2	0	7	0	7	0	0	0	0	0	2	18	7	18	25
0	0	0	0	0	4	0	5	0	5	0	0	0	0	0	4	0	5	0	5
0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	1	0	1	0	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	16
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	34
0	0	0	0	0	0	0	0	16	16	0	0	0	0	0	0	0	0	34	34
0	0	0	0	0	0	0	0	34	34	0	0	0	0	0	0	0	0	50	50
0	0	0	0	0	0	0	0	34	34	0	0	0	0	0	0	0	0	68	68
0	0	0	0	0	0	0	0	34	34	0	0	0	0	0	0	16	0	68	68
0	0				0	0	0	34	34	0	0	0	0	0	0	18	0	52	52
0	0				0	16	0	34	34	0	0	0	0	0	0	0	0	34	34
0	0				0	18	0	18	18	0	0	0	0	0	0	16	0	34	34
0	0				0	0	0	0	0	0	0	0	0	0	0	18	0	18	18
0	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EXISTING FALL SOCCER ON TURF1
NO BASEBALL ON TURF2
SATURDAY GAMES

Ravensdale 1,2,3, and Extg Turf 1 only			
Hourly Summaries			
In	Out	Bothways	
20	0	20	
26	0	26	
38	0	38	
60	0	60	
71	0	71	
73	0	73	
77	0	77	
78	13	91	
76	20	96	
60	22	82	
51	35	86	
49	42	91	
61	44	105	
70	44	114	
72	44	116	
74	58	132	
75	75	150	
75	75	150	
59	75	134	
49	75	124	
47	75	122	
45	61	106	
44	44	88	
46	44	90	
62	60	122	
71	78	149	
73	78	151	
77	78	155	
74	78	152	
62	78	140	
40	62	102	
25	44	69	
13	44	57	
3	44	47	
0	44	44	
2	44	46	
18	60	78	
27	65	92	
29	58	87	
33	56	89	
34	43	77	
32	36	68	
16	18	34	
7	0	7	
5	0	5	
1	0	1	
0	0	0	
0	0	0	
0	16	16	
0	34	34	
0	34	34	
0	34	34	
0	34	34	
0	34	34	
0	34	34	
0	18	18	
0	0	0	
0	0	0	

3 SOCCER FIELD USE, NO
EXISTING FIELD TURF 1 (#
NEW FIELD TURF 3&4 SAT

Ravensdale Extg & N	
Hourly Summarie	
In	Out
49	0
60	0
65	0
83	0
75	0
68	0
52	0
42	0
37	0
33	0
34	16
33	34
63	34
83	50
88	68
78	82
69	83
68	65
34	65
13	49
8	31
18	17
27	16
31	34
67	50
87	84
92	102
84	102
75	86
71	68
35	52
15	18
10	0
18	0
27	16
31	34
69	50
90	84
94	102
86	102
77	86
73	68
35	52
14	18
10	0
2	0
0	16
0	34
0	50
0	84
0	102
0	102
0	86
0	68
0	52
0	18
0	0

D BASEBALL FIELD USE
(#2 VACANT) AND
TURDAY GAMES

ew Turf es Bothways	Assume all at new parking lot for 3 turf field uses			
	Left In	Right In	Left Out	Right Out
	30%	70%	60%	40%
49	15	34	0	0
60	18	42	0	0
65	20	46	0	0
83	25	58	0	0
75	23	53	0	0
68	20	48	0	0
52	16	36	0	0
42	13	29	0	0
37	11	26	0	0
33	10	23	0	0
50	10	24	10	6
67	10	23	20	14
97	19	44	20	14
133	25	58	30	20
156	26	62	41	27
160	23	55	49	33
152	21	48	50	33
133	20	48	39	26
99	10	24	39	26
62	4	9	29	20
39	2	6	19	12
35	5	13	10	7
43	8	19	10	6
65	9	22	20	14
117	20	47	30	20
171	26	61	50	34
194	**28**	**64**	**61**	**41**
186	25	59	61	41
161	23	53	52	34
139	21	50	41	27
87	11	25	31	21
33	5	11	11	7
10	3	7	0	0
18	5	13	0	0
43	8	19	10	6
65	9	22	20	14
119	21	48	30	20
174	27	63	50	34
196	**28**	**66**	**61**	**41**
188	26	60	61	41
163	23	54	52	34
141	22	51	41	27
87	11	25	31	21
32	4	10	11	7
10	3	7	0	0
2	1	1	0	0
16	0	0	10	6
34	0	0	20	14
50	0	0	30	20
84	0	0	50	34
102	0	0	61	41
102	0	0	61	41
86	0	0	51.6	34.4
68	0	0	40.8	27.2
52	0	0	31.2	20.8
18	0	0	10.8	7.2
0	0	0	0	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	286	66	28	305	61	41
Peak Hour Factor	0.90	0.60	0.60	0.90	0.70	0.70
Hourly flow rate (vph)	318	110	47	339	87	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			428		750	318
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			428		750	318
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		76	92
cM capacity (veh/h)			1132		363	723

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2
Volume Total	318	110	386	87	59
Volume Left	0	0	47	87	0
Volume Right	0	110	0	0	59
cSH	1700	1700	1132	363	723
Volume to Capacity	0.19	0.06	0.04	0.24	0.08
Queue Length 95th (ft)	0	0	3	23	7
Control Delay (s)	0.0	0.0	1.4	18.0	10.4
Lane LOS			A	C	B
Approach Delay (s)	0.0		1.4	15.0	
Approach LOS				B	

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	352	59	20	188	20	11
Peak Hour Factor	0.90	0.60	0.60	0.90	0.70	0.70
Hourly flow rate (vph)	391	98	33	209	29	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			489		667	391
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			489		667	391
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		93	98
cM capacity (veh/h)			1074		411	657

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2
Volume Total	391	98	242	29	16
Volume Left	0	0	33	29	0
Volume Right	0	98	0	0	16
cSH	1700	1700	1074	411	657
Volume to Capacity	0.23	0.06	0.03	0.07	0.02
Queue Length 95th (ft)	0	0	2	6	2
Control Delay (s)	0.0	0.0	1.4	14.4	10.6
Lane LOS			A	B	B
Approach Delay (s)	0.0		1.4	13.1	
Approach LOS				B	

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	310	76	25	180	67	36
Peak Hour Factor	0.90	0.60	0.60	0.90	0.70	0.70
Hourly flow rate (vph)	344	127	42	200	96	51
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			471		628	344
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			471		628	344
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		78	93
cM capacity (veh/h)			1091		430	698

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2
Volume Total	344	127	242	96	51
Volume Left	0	0	42	96	0
Volume Right	0	127	0	0	51
cSH	1700	1700	1091	430	698
Volume to Capacity	0.20	0.07	0.04	0.22	0.07
Queue Length 95th (ft)	0	0	3	21	6
Control Delay (s)	0.0	0.0	1.8	15.8	10.6
Lane LOS			A	C	B
Approach Delay (s)	0.0		1.8	13.9	
Approach LOS				B	

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	293	62	26	311	41	27
Peak Hour Factor	0.90	0.60	0.60	0.90	0.70	0.70
Hourly flow rate (vph)	326	103	43	346	59	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			429		758	326
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			429		758	326
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		84	95
cM capacity (veh/h)			1131		361	716

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2
Volume Total	326	103	389	59	39
Volume Left	0	0	43	59	0
Volume Right	0	103	0	0	39
cSH	1700	1700	1131	361	716
Volume to Capacity	0.19	0.06	0.04	0.16	0.05
Queue Length 95th (ft)	0	0	3	14	4
Control Delay (s)	0.0	0.0	1.3	16.9	10.3
Lane LOS			A	C	B
Approach Delay (s)	0.0		1.3	14.3	
Approach LOS				B	

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

LEFT TURN LANE WARRANT CALCULATION

for a two-lane highway, unsignalized

Intersection: Ravensdale Ph 2 Park Entrance
Project: Ravensdale Park
Volumes: 2015 PM PK Weekday (5:00pm +/-)

INPUTS:

V_a =	volume advancing (per hour) =	208	vph
V_o =	volume opposing (per hour) =	411	vph
V_L =	volume left turns per hour	20	vph
v =	operating speed =	45	mph
$\rho_{threshold}$ =	utilization factor threshold based on operating speed (design speed is assumed to be +10 mph of operating speed)	0.0175	40 mph, ρ =.020; 50 mph, ρ = .015; 60 mph, ρ = .010

For 2-lane highway; from TRB 211 field studies (also represented as t_l)

T =	average time to make left turn =	3.0	sec

For 2-lane highway; from TRB 211 field studies

t_g =	critical gap =	5.0	sec

For 2-lane highway; from TRB 211 field studies

t_e =	left turn time to clear or exit =	1.9	sec

CALCULATIONS:

percent left turns in advancing stream

L =	V_L/V_a	9.5%	%

average headway; advancing stream

t_a =	average headway ($3600/V_a$)	17.33	sec

opposing vehicle flow rate

λ_o =	vehicles opposing/sec ($V_o/3600$)	0.114	veh/sec

average time that a left turning vehicle must wait for a suitable gap in the opposing traffic stream

t_w =	$[3600/\{V_o e^{-(V_o t_g/3600)}\}]-(3600/V_o)-t_g$	1.74	sec
λ_1 =	# of arrivals/hour of through vehicles behind left turning vehicles = $[L(1-L)V_a](t_w+t_e)/[(2/3)t_a]$	5.64	
ß =	$e^{-\lambda_o t_g}(\lambda_o t_g+1)$	0.89	
A =	(1-ß)3600	405	
B =	(1-ß)3600/2 = A/2	203	

average service rate (number of left turns that can be made in one hour)

μ =	(3600-A-B)/T = (3600-1.5A)/T	997	
ρ =	λ_1 / μ	0.0057	
	IS LEFT TURN POCKET WARRANTED?	**NO**	

Source: HRR, TRB #211

LEFT TURN LANE WARRANT CALCULATION

for a two-lane highway, unsignalized

Intersection: Ravensdale Ph 2 Park Entrance
Project: Ravensdale Park
Volumes: 2015 PM PK Weekday (7:00pm +/-)

INPUTS:

V_a =	volume advancing (per hour) =	205	vph
V_o =	volume opposing (per hour) =	386	vph
V_L =	volume left turns per hour	25	vph
v =	operating speed =	45	mph
$\rho_{threshold}$ =	utilization factor threshold based on operating speed (design speed is assumed to be +10 mph of operating speed)	0.0175	40 mph, ρ =.020; 50 mph, ρ = .015; 60 mph, ρ = .010

For 2-lane highway; from TRB 211 field studies (also represented as t_l)

T =	average time to make left turn =	3.0	sec

For 2-lane highway; from TRB 211 field studies

t_g =	critical gap =	5.0	sec

For 2-lane highway; from TRB 211 field studies

t_e =	left turn time to clear or exit =	1.9	sec

CALCULATIONS:

percent left turns in advancing stream

L =	V_L/V_a	12.3%	%

average headway; advancing stream

t_a =	average headway ($3600/V_a$)	17.54	sec

opposing vehicle flow rate

λ_o =	vehicles opposing/sec ($V_o/3600$)	0.107	veh/sec

average time that a left turning vehicle must wait for a suitable gap in the opposing traffic stream

t_w =	$[3600/\{V_o e^{-(V_o t_g/3600)}\}]-(3600/V_o)-t_g$	1.61	sec
λ_1 =	# of arrivals/hour of through vehicles behind left turning vehicles = $[L(1-L)V_a](t_w+t_e)/[(2/3)t_a]$	6.66	
ß =	$e^{-\lambda_o t_g}(\lambda_o t_g+1)$	0.90	
A =	(1-ß)3600	364	
B =	(1-ß)3600/2 = A/2	182	

average service rate (number of left turns that can be made in one hour)

μ =	(3600-A-B)/T = (3600-1.5A)/T	1018	
ρ =	λ_1 / μ	0.0065	
	IS LEFT TURN POCKET WARRANTED?	**NO**	

Source: HRR, TRB #211

LEFT TURN LANE WARRANT CALCULATION

for a two-lane highway, unsignalized

Intersection: Ravensdale Ph 2 Park Entrance
Project: Ravensdale Park
Volumes: 2015 PK HR (for street) SATURDAY 10:30AM

INPUTS:

V_a =	volume advancing (per hour) =	337	vph
V_o =	volume opposing (per hour) =	355	vph
V_L =	volume left turns per hour	26	vph
v =	operating speed =	45	mph
$\rho_{threshold}$ =	utilization factor threshold based on operating speed (design speed is assumed to be +10 mph of operating speed)	0.0175	40 mph, ρ =.020; 50 mph, ρ = .015; 60 mph, ρ = .010

For 2-lane highway; from TRB 211 field studies (also represented as t_l)

T =	average time to make left turn =	3.0	sec

For 2-lane highway; from TRB 211 field studies

t_g =	critical gap =	5.0	sec

For 2-lane highway; from TRB 211 field studies

t_e =	left turn time to clear or exit =	1.9	sec

CALCULATIONS:

percent left turns in advancing stream

L =	V_L/V_a	7.8%	%

average headway; advancing stream

t_a =	average headway ($3600/V_a$)	10.67	sec

opposing vehicle flow rate

λ_o =	vehicles opposing/sec ($V_o/3600$)	0.099	veh/sec

average time that a left turning vehicle must wait for a suitable gap in the opposing traffic stream

t_w =	$[3600/\{V_o e^{-(V_o t_g/3600)}\}]-(3600/V_o)-t_g$	1.46	sec
λ_1 =	# of arrivals/hour of through vehicles behind left turning vehicles = $[L(1-L)V_a](t_w+t_e)/[(2/3)t_a]$	11.50	
ß =	$e^{-\lambda_o t_g}(\lambda_o t_g+1)$	0.91	
A =	(1-ß)3600	317	
B =	(1-ß)3600/2 = A/2	158	

average service rate (number of left turns that can be made in one hour)

μ =	(3600-A-B)/T = (3600-1.5A)/T	1042	
ρ =	λ_1 / μ	0.0110	
	IS LEFT TURN POCKET WARRANTED?	**NO**	

Source: HRR, TRB #211

LEFT TURN LANE WARRANT CALCULATION

for a two-lane highway, unsignalized

Intersection: Ravensdale Ph 2 Park Entrance
Project: Ravensdale Park
Volumes: 2015 PK HR (for site) SATURDAY 2:30PM

INPUTS:

V_a =	volume advancing (per hour) =	333	vph
V_o =	volume opposing (per hour) =	352	vph
V_L =	volume left turns per hour	28	vph
v =	operating speed =	45	mph
$\rho_{threshold}$ =	utilization factor threshold based on operating speed (design speed is assumed to be +10 mph of operating speed)	0.0175	40 mph, ρ =.020; 50 mph, ρ = .015; 60 mph, ρ = .010

For 2-lane highway; from TRB 211 field studies (also represented as t_1)

T =	average time to make left turn =	3.0	sec

For 2-lane highway; from TRB 211 field studies

t_g =	critical gap =	5.0	sec

For 2-lane highway; from TRB 211 field studies

t_e =	left turn time to clear or exit =	1.9	sec

CALCULATIONS:

percent left turns in advancing stream

L =	V_L/V_a	8.5%	%

average headway; advancing stream

t_a =	average headway ($3600/V_a$)	10.80	sec

opposing vehicle flow rate

λ_o =	vehicles opposing/sec ($V_o/3600$)	0.098	veh/sec

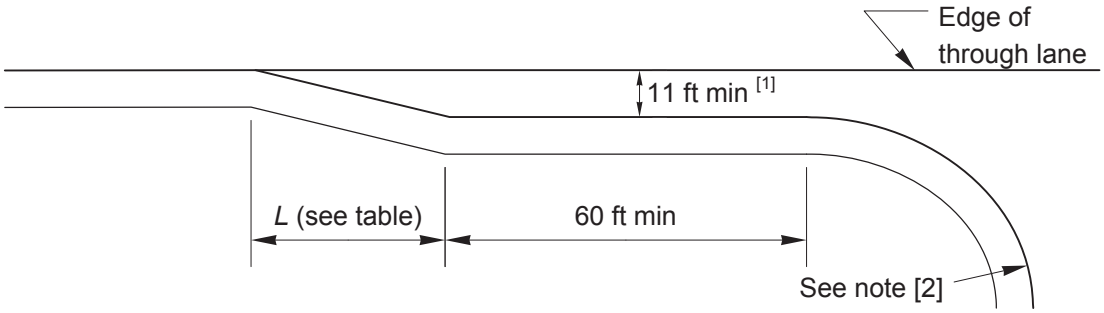
average time that a left turning vehicle must wait for a suitable gap in the opposing traffic stream

t_w =	$[3600/\{V_o e^{-(V_o t_g/3600)}\}]-(3600/V_o)-t_g$	1.45	sec
λ_1 =	# of arrivals/hour of through vehicles behind left turning vehicles = $[L(1-L)V_a](t_w+t_e)/[(2/3)t_a]$	12.00	
ß =	$e^{-\lambda_o t_g}(\lambda_o t_g+1)$	0.91	
A =	(1-ß)3600	312	
B =	(1-ß)3600/2 = A/2	156	

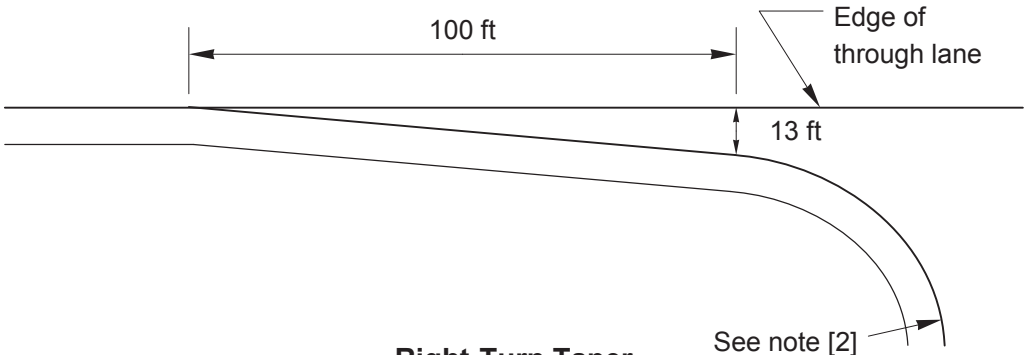
average service rate (number of left turns that can be made in one hour)

μ =	(3600-A-B)/T = (3600-1.5A)/T	1044	
ρ =	λ_1 / μ	0.0115	
	IS LEFT TURN POCKET WARRANTED?	**NO**	

Source: HRR, TRB #211



Right-Turn Pocket



Right-Turn Taper

Posted Speed Limit	*L*
Below 40 mph	40 ft
40 mph or above	100 ft

Notes:

[1] 12 ft desirable.

[2] For right-turn corner design, see Exhibit 1310-14.

Right-Turn Pocket and Right-Turn Taper

Exhibit 1310-20